

**The Rhythmic Organisation of  
North Indian Classical Music:  
*tāl, lay* and *laykārī***

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## ABSTRACT

North Indian (Hindustānī) classical music is remarkable for both the sophistication and the diversity of its rhythmic organisation. Rhythm and metre are controlled by a number of concepts which, although developed over the course of many centuries, have acquired new meaning as a result of radical changes in performance practice over the last century.

This work examines the rhythmic organisation of North Indian music on all levels- from large scale performance scheme, to metric structure, to the generation and variation of surface rhythm patterns. It does so by synthesising two research methodologies- combining the study of indigenous concepts and hence of the music's wider cultural context, with objective and empirical analytical techniques- in order to build up a comprehensive and culturally appropriate model of rhythmic organisation.

Section I looks at various aspects of rhythmic organisation, proposing a flexible theoretical model of metric structure, and demonstrating its relevance with studies of key rhythmic parameters. Chapter 1 puts forward the principal arguments for this theoretical model. The next four chapters cover the following topics in turn- *tāl* (metric structure), *lay* (tempo, rhythmic density), performance practice and surface rhythm (including composition structure, and development techniques), and finally *laykārī* (rhythmic variation).

Section II illustrates the findings of Section I, by means of a case study. This study shows how two instrumental forms- the *madhya lay gat* and *vilambit gat*, as performed in the repertoire of *sitārist* Deepak Choudhury- may be characterised in terms of rhythmic parameters. This characterisation is used to inform a discussion of the status of these *gats* as independent genres, and of their relationship with analogous vocal forms. The research generates a wide range of insights into North Indian classical music, demonstrating the application of Section I's theoretical model, and of the analytical approach developed in the thesis as a whole.



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## A note on orthography

Indian technical terms are italicised throughout, and spelt in a form transliterated from their most common Hindi spellings (alternative spellings have not been listed). Transliteration is according to the standard system set out in R.S. McGregor's "Outline of Hindi grammar" (Oxford 1972, p.8), and in R. Snell and S. Weightman's "Hindi" (London 1989, p.5ff). English style plurals have been employed throughout.

The inherent vowel 'a', generally omitted from final syllables in transliterations from Hindi (thus *tāl*, not *tāla*), is included where the transliteration is from a Sanskrit title or author, or from a song text (since these vowels are generally pronounced in singing). In quotations from other works in English, the original spelling and type style have naturally been retained.

## A note on music notations







Music examples are given in a number of different forms, according to the information to be presented. Elements of Western staff notation, and of the Hindustānī notation system popularised earlier this century by Pandit V.N. Bhatkande, are combined in various ways.

In all cases *tāl* (metric structure) is indicated according to the Hindustānī system. In all but the simplest examples, rhythmic notation is given using Western symbols. Where necessary either text, instrumental or percussion stroke names (*bols*), or *sargam* (solfège) syllables are added; in a few examples melody has been indicated in full Western staff notation form.

The symbols used are as follows;

*Tāl* structure: Hindustānī signs for *sam* (X), *khālī* (0), and *tālī* (numerals 1, 2 etc) are given in the top line of all music examples, and these signs apply to everything vertically below them unless otherwise indicated. *Mātrā* ('beat') numbers are given in the second line of most transcriptions, and are referred to in the text as 'm.1, m.2' etc. Vertical lines divide *vibhāgs* (sections).

Rhythmic notation is not generally given for *theḱās* (basic drum pattern), in which case the system is follows. The *bols* (strokes) of each *mātrā* are grouped together and the *mātrās* separated by spaces. Rests or prolonged strokes are indicated by a dash (-), and the *mātrā* is divided equally by the sum total of all strokes and dashes. Thus;

dhin = 	(1 mātrā)	dhāge = 
- = 		-dhī = 
traka = 		tin--tr = 

In transcriptions, rhythm is indicated using standard Western notational symbols, observing the following conventions;

sign	meaning
	tie
	phrase mark, unless the text syllable is followed by a horizontal line (as below)
	indicates a melisma
>	accent
%	repeat (previous <i>mātrā</i> or <i>vibhāg</i> )
c.42	cycle number (of total performance)
m =  = 42MM	<i>mātrā</i> is notated as ''; tempo as indicated ( <i>mātrās</i> per minute)
	<i>mīṇḍ</i> (melisma)
	<i>kr̥ṇtan</i> (pull-off or hammer-on, on <i>sitār</i> - or vocal equivalent)
	<i>zamzamā</i> (combination of <i>kr̥ṇtans</i> , see above)
[      ] x3	phrase played three times (used for some <i>tihāīs</i> )
SRGMPDN; sa re ga ma pa dha ni da, ra, diri, dra, rda	<i>sargam</i> (solfège syllables, here in ascending order; superscript dot indicates high octave, subscript dot lower octave) <i>sitār</i> strokes; da= inward, ra= outward, diri= da+ra in the time previously occupied by one stroke
	group or section marker (significance indicated adjacently and/or in text)
	<i>tihāi</i> elements

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Martin Clayton  
London, November 1992



## Section I



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## Chapter 1: Introduction and theoretical background

### **1.1: The study of North Indian rhythm**

North Indian classical music is one of the most rhythmically sophisticated in the world, yet research on North Indian rhythm in modern times has been limited, and for the most part superficial. A combination of these two factors makes the rhythmic organisation of Hindustānī<sup>1</sup> music an ideal subject for analytical research.

Although the Hindustānī *tāl* system stands comparison with any system of rhythmic organisation which one is likely to encounter- it is complex, sophisticated, remarkably coherent- description of *tāl* theory does not in itself constitute rhythmic analysis at the most fundamental level possible. This thesis will demonstrate that analyses may be pursued which both aid and complement interpretation of *tāl* theory, and in doing so advance understanding of many aspects of musical rhythm and form.

The present study will have two main results, each dependent on the other; the description of a theoretical model of the rhythmic organisation of North Indian music, and an analysis of its most important rhythmic parameters. These studies are developed in Section I of this thesis; together they facilitate rhythmic analyses, such as those contained in the case study presented in Section II, which have wide ranging implications for research in Indian music.

In the first instance, by clarifying the indigenous theoretical system we may better understand Indian concepts of rhythm, metre and the organisation of music. This in turn may enable us to express certain culturally based assumptions regarding time and music, in a form intelligible to those both inside and outside the specific music culture. Rhythmic analysis will also enable better understanding of Hindustānī music's performance practice, and provide valuable perspectives on issues of genre, form and aesthetics. Indeed it is possible to characterise musical forms in considerable detail in rhythmic terms, and this characterisation will ultimately aid comparative, historical and even cross-cultural studies.

Rhythmic analysis is the study of how music works- how it is structured, organised and generated in time. It is the study of the most fundamental aspects of music, and tells us not only about the music but about the culture which produces that music, about the

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<sup>1</sup>The terms 'Hindustānī' and 'North Indian' [music] are used interchangeably in this thesis.

importance of universal and culturally specific factors in music, and ultimately about how music may represent our knowledge of the world.

### 1.1.1: The present study in perspective

All Indian musicians, needless to say, know and teach the rudiments of *tāl*, or at least of those *tāls* relevant to their own music.<sup>2</sup> The overwhelming majority of Indian writers who address the topic of *tāl*, do so by reproducing and/or compiling in written form the information which may be verbalised in such contexts, and therefore rarely go beyond simple prescriptions of *tāls*- number of beats, clap patterns, *theḱās* (characteristic drum patterns) and a rough indication of suitable tempi, and genres in which the *tāl* may be employed. There are too many such works to be listed here, although perhaps the best Indian summaries can be found in the works of Ghosh [eg. 1968, 1975a, 1975b].

Detailed accounts of the repertoire of the *tablā* and *pakhāvaj* drums are available (the better ones usually in Indian languages), of which those cited in this thesis include those of Bhagvandās & Pāgaldās [1960] and of Alkuṭkar [1960?]. Among other notable works by Indian authors, Bhowmick gives insights into the Banāras *tablā bāj*<sup>3</sup> [eg. 1981]; while Saxena has written a series of essays on the aesthetics of Hindustānī rhythm (collected 1979). Overall however, the analysis of rhythmic organisation does not appear to have been of interest to most Indian commentators in recent times.

The most extensive Hindī work<sup>4</sup> is that of Chaudhuri [1984], who describes the modern North Indian *tāl* system (and those of several other Indian traditions) in the context of ancient and medieval theory. The contrast with the present work could hardly be more clear; the present work covers modern practice as far as practicable on its own terms, while Chaudhuri follows a long established tradition of Indian scholarship, in reconciling modern practice with historical theories.<sup>5</sup>

<sup>2</sup>Musicians can nevertheless be surprisingly lacking in knowledge of *tāls* in which they themselves do not perform. In a sense therefore, each musician uses only a fragment of the overall system- which is, as it were, compiled by musicologists.

<sup>3</sup>*Bāj* means 'playing style'- it is often taken to be synonymous with *gharānā* (lit: household) which in musical parlance suggests a musical tradition (usually family based).

<sup>4</sup>Of writing in Indian languages, Gokhale's Marathi work [1979] is even more substantial.

<sup>5</sup>See eg. Rowell [1981a:220].

This is an important point with regard to Indian intellectual history in general, and musicology in particular. As Pollock points out, in the Indian tradition “there can be for the thinker no originality of thought, no brand-new insights, notions, perceptions.. All Indian learning, accordingly, perceives itself and presents itself largely as commentary on the primordial *śāstras*” [1985:515]. Needless to say, our perception of scholarship in the West is quite different: indeed the very *raison d’être* for a work such as this is to demonstrate such originality of thought. It is hardly surprising therefore that no Indian scholar has approached the subject of rhythmic organisation in the manner attempted here.

Despite the increase in scholarship on Indian music in the West since the 1970s however, neither has any Western writer yet covered the ground of this thesis. Those who have commented only briefly on *tāl* have relied on Indian works, and say nothing new on the subject. Junius has published a substantial volume on North Indian *tāls* [1983]: it does not cover the ground of this work however, and suffers from a number of obvious flaws—such as listing *tāls* of various historical periods together without distinguishing them. The most valuable original work done by Westerners on Indian rhythm has been into the *tablā* repertoire: the best studies of this kind are those of Gottlieb [1977]; Kippen [1985, 1988]; Wegner [1982]; Shepherd [1976] and Stewart [1974].

Of these, Gottlieb provides the most insight into the fundamentals of North Indian rhythm; he is the only one to seriously attempt to come to terms with the phenomenon of *laykāri*, for example.<sup>6</sup> Most of all however it is Stewart who has opened up the field of rhythmic organisation to further study. By researching the historical background of the *tablā*, she has exposed the hybrid nature of not only the instrument, but also of its repertoire and hence of the *tāl* system itself. Parts of the present research have been inspired by Stewart’s work, which she herself has not developed further in print.<sup>7</sup>

Other researchers to have contributed to the study of *tāl* include Manuel [1983a, 1983b, 1989], whose thesis includes a chapter on *tāl* in *thumrī*. Powers [1980] surveys the subject in the New Grove, although confusion does arise occasionally out of his treatment

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<sup>6</sup>See 1.4.2 and ch. 5.

<sup>7</sup>See 1.4.4 in particular.

of North Indian music from a South Indian perspective.<sup>8</sup> Both Rowell and Widdess have been concerned with *tāl*, indeed the whole subject of time measurement in music; although neither has published more than brief works on the modern North Indian system, it is these two (along with Stewart) who have demonstrated the possibilities for rhythmic analysis of Indian music, which are exploited in this thesis.

It is apparent therefore that virtually all the major works in North Indian rhythm up to the present time have focussed either on the *tablā* repertoire or on the historical perspective. This thesis will demonstrate that there is much to be gained from an analysis of the rhythmic organisation of Indian music in its own right.

### 1.1.2: The aims and scope of the present study

The present work amounts to an analysis of the rhythmic organisation of Hindustānī classical music. It is concerned with the fundamental questions of how music is organised in time, and how this is determined by both culture-specific and universal forces. This entails both an understanding of rhythm and its generation, and an appreciation of what rhythmic phenomena can reveal about music in general, and about the culture which produces that music.

In practice this study of rhythmic organisation covers metric structure and its role (seen as both a conceptual and a concrete phenomenon), tempo and rhythmic density and their significance, the structure of fixed compositions, performance processes in improvised development and their role in generating rhythm, and rhythmic variation techniques. In the terms of North Indian music culture, the thesis is primarily about the concepts of *tāl* (metric structure), *lay* (tempo, rhythmic density) and *laykārī* (rhythmic variation), although it covers much more besides.

The music with which this study is concerned belongs to the so-called 'classical' genres of Hindustānī music. These include the vocal genres *dhrupad*, *dhamār*, *sādrā*, *khyāl*, *tarānā*, *ṭappā*, *thumrī* and *dādrā*, as well as instrumental music including both *gats* and

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<sup>8</sup>For instance he uses "beat" as a synonym for *vibhāḡ* (rather than for *mātrā*, which would be more usual for North Indian music); as a result he talks of "beats" as being of variable length, a concept which makes more sense in the South Indian context.

adaptations of vocal forms. In general percussion solo performance is excluded<sup>9</sup>, as is *kathak* dance, and lighter vocal genres such as *gīt*, *ghazal* and *bhajan*- although there are a number of occasions where it is necessary to refer to one or other of these genres in passing.

Broadly speaking, the theoretical approach of the study can be characterised as an attempt at a synthesis- of an insider's understanding and an outsider's objective analysis. Thus at each stage the analysis is concerned with indigenous concepts and categories, as determined from both oral tradition and musicological literature: the analysis seeks to comprehend and interpret those concepts, and to employ them to describe and characterise the music. However, when objectively analysed it is clear that indigenous theoretical concepts do not always adequately describe current musical practice, and it will be necessary to ask why this is so, and how the limitations of 'folk' concepts are best overcome.

Indian concepts may be inadequate for our analytical purposes partly because- as in many artistic traditions- theory simply lags behind practice. This fact is particularly true of Indian artistic traditions however, where an innate conservatism has for centuries made theorists reluctant to acknowledge fundamental change, preferring as they do to stress tradition and continuity. In this context, in order to build up a true and comprehensive picture of the music, it is often necessary for an objective analysis to go beyond the explanations offered by the oral tradition, pointing out instances where historical change is particularly significant.

As an ethnomusicological study, the main thrust of the work amounts to an attempt to combine the benefits of an appreciation of the relationship between music and its cultural context, with those of an objective analysis which is prepared to acknowledge the importance of factors not so acknowledged within the culture. The former is necessary since an analysis which, however objective, fails to take account of the culture's perspective on its own music, is likely to miss a great deal of the significance of that music- this is of course an article of faith in modern ethnomusicology, and one to which I subscribe.

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<sup>9</sup>Lest any such confusion arise, it must be made clear that the thesis is not primarily concerned with drums, drumming or drum repertoires, on which a considerable amount of research has been published in recent years. Where the *tablā* and *pakhāvaj* are discussed here, it is their contribution to the rhythmic organisation of the music as a whole- vocal or instrumental- which will be under consideration.

However, the outsider's perspective is also necessary, and using this it will be demonstrated below how certain traditional concepts are incapable of describing much modern music. If we adopt an approach in which we forbid ourselves to question the theoretical tenets of a music tradition- even once we have taken the trouble to learn and understand them- then we will never be able to overcome this difficulty. This is a particularly acute problem in Indian music, where musicians and musicologists alike are constrained by a requirement to promote the ideas of tradition and continuity- there is no reason however why ethnomusicologists (of any nationality) need be bound by the same constraints.

### Outline

The first chapter of the thesis introduces some of the most important analytical perspectives to be employed later on (1.2). It goes on to introduce the basic theory of the North Indian *tāl* system, and to outline the model of rhythmic organisation implicit therein, and the limitations of that model when applied as an analytical tool (1.3). The following section (1.4) builds on this work, culminating in the proposition of a detailed theoretical model of North Indian rhythmic organisation; thus chapter 1 provides the theoretical basis of the analysis which follows.

Subsequent chapters refer back to the perspectives introduced in 1.2, and to the theoretical model set out in 1.4, as they discuss the most important aspects of rhythmic organisation in this music. They cover in turn, *tāl*, *lay*, performance practice (including composition structure and development techniques) and the generation of surface rhythm, and *laykāṛī*. Many types of rhythmically significant factors are considered- from accompaniment style to verse metre, from tempo to the construction of cadential patterns- and all of these are related to fundamental questions of rhythmic organisation, as introduced in chapter 1.

Thus chapters 1 to 5, which comprise Section I of the thesis, describe North Indian rhythmic organisation in terms of a theoretical model, and illustrate this with reference to specific rhythmic parameters in actual musical performance. The second section- chapters 6 to 9- illustrates many of the points made in earlier chapters by means of a case study in rhythmic analysis. This specific study characterises two *gat* types in the repertoire of the

sitārist Deepak Choudhury, and examines their relationship both to each other and to two vocal genres, to which they are held to be analogous.

Once again therefore, the oral tradition forms the basis of the study and directs it- the study is informed by many years spent studying under Deepak Choudhury- but this is complemented by the use of a number of objective and empirical analytical techniques. A number of rhythmically important parameters are considered (parameters which will have been discussed in a more general context in Section I), and this work shows how it is possible both to characterise compositional forms to a considerable degree in purely rhythmic terms, and to use that characterisation as the basis of comparative studies.

The case study, besides contributing to research on instrumental repertoires and their development, and on the relationships between vocal and instrumental music, demonstrates that theoretical analysis of musical rhythm is not only an end in itself, but has practical applications in a number of other musicological fields.

### **1.2: Perspectives: the importance of culture-specific and universal factors in rhythmic analysis**

Rhythmic analysis of North Indian music may usefully be informed by a wide range of perspectives. Some of the most obvious are the evidence of the oral tradition (both on rhythmic theory, and on the formal and technical factors underlying rhythm); the historical dimension; epistemological factors and cultural symbolisms which influence rhythmic organisation; comparison with research into other music traditions; and theories of rhythm perception (and cognitive psychology in general). Indeed all these perspectives and more may profitably be considered, if a coherent and appropriate model of rhythmic organisation is to be developed.

One must complement an insider's or 'folk' view with objective (and where possible empirical) research, in order to produce an analysis which is not only culturally appropriate, but also coherent enough to be communicable to those who are not Indian music specialists. The two approaches are entirely complementary; the 'folk' view directs the objective research, which in turn generates an analysis to either confirm that



perspective, or in some cases to establish that the accepted theory is either incomplete, or clinging to historical theories of limited applicability in modern music. The latter approach may question the folk view in the first instance, but as will be demonstrated below, ultimately complements rather than diminishes it.

The following sections outline the most important perspectives, which will be drawn on in the main study. The list is not exhaustive, and other factors are introduced in subsequent sections. For instance, references to the historical dimension of the study will be made in the discussions of *lay* and *laykāri* (1.4, chs. 3 & 5); and in commenting on the development of slow tempo *khyāl* singing (1.4.3). The remainder of this section is divided between culture-specific perspectives (1.2.1), and some which are universal or empirical (1.2.2)- a division which is analogous to that between the so-called 'insider's' and 'outsider's' approaches cited above.

### **1.2.1: Rhythmic organisation in Indian cultural perspective**

It would clearly be absurd to attempt a study of an art music tradition such as this, with a musicological tradition going back some 2,000 years and a highly sophisticated rhythmic system, without using a study of that system as the basis of the analysis. If we do not appreciate the way musicians conceive the structure of their music and the terms they use to describe it, our analysis risks being seriously inadequate. This is a particularly acute problem in rhythmic analysis where for example, transcription made without appreciation of indigenous musical concepts will fail to illustrate the structure as understood by the performer and educated listeners (it may of course show things of interest not appreciated by the artist himself, but nevertheless this remains an important factor).

Concepts such as *tāl*, *lay*, and *laykāri* are therefore of primary importance to this research. The understanding of these concepts- which are not directly translatable into comparable Western terms- presents a challenge of interpretation, especially for the benefit of those not immersed in Indian music culture. These concepts are approached in more detail in chapters 2 (*tāl*), 3 (*lay*), and 5 (*laykāri*).

Even within Indian music culture, we must look beyond explicitly rhythmic concepts for an understanding of rhythmic organisation. The rhythmic structure of the

music is clearly influenced as much by the general parameters of performance practice- formal, technical, textual, aesthetic and so on- as by the agents of rhythmic organisation *per se* (*tāl*, *lay*, *laykāri*). Therefore it is necessary to look at the various genres, forms and styles which make up the Hindustānī tradition, examining what is performed, when and with what aims, and what aesthetic assumptions underlie the choices made by performers. This question will be addressed more fully in chapter 4.

It is necessary to also consider here the importance of culturally specific ideas, since these ideas influence the development both of musicological concepts, and of the practice of music itself. This is a view often expressed by ethnomusicologists<sup>10</sup>; however it still remains to show how such ideas (and in the Indian context, what we would call philosophical or metaphysical speculation is particularly important) influence music structure.

There are no doubt differences between music cultures, in the degree and manner of the influence of metaphysical concepts. In the case of Indian art music, there is reason to believe that such concepts have strongly influenced its development, and that indeed music seeks explicitly to reveal ultimate Truth- from an outsider's perspective, we might say to represent metaphysical ideas about the world.<sup>11</sup> The most emphatic articulation of this view is contained in this comment of one of India's greatest musicians, Pandit Ravi Shankar;

"The highest aim of our music is to reveal the essence of the universe which it reflects" [1969:17]<sup>12</sup>

Since the problem of time is a fundamental one of all philosophical systems, and temporal organisation an equally important aspect of all music systems, it is in this area that epistemological connections are most likely to be manifested in art music traditions. Thus the Indian concept of 'cyclical' time is of importance in a musical context. Other metaphysical concepts- such as the interdependence of the phenomena of form and process- may find expression in music systems, and ultimately influence the temporal organisation

<sup>10</sup>Hoffman expressed this assumption most forcefully; "...it is not possible to isolate something called music from something else called culture. Musical knowledge *is* cultural knowledge. Furthermore, the way in which a person knows music is not different from the way he knows in general. That is, musical knowledge is based on the same epistemology which underlies and pervades the entire culture" [1978:69]. See also Merriam [1964:13], and Such and Jairazbhoy [1982:104].

<sup>11</sup>For instance, Rowell has written that "To the Indian music is a manifestation of natural law" [1989:28], a theme elaborated in several of his works.

<sup>12</sup>Cited in Gottlieb [1985:31].

of music. There are thus a number of important ways in which the rhythmic organisation of North Indian music reflects wider epistemological or metaphysical considerations.<sup>13</sup> This section will deal with the three most important areas of epistemological connection for rhythmic organisation, namely;

- the necessity for accurate and unambiguous time measurement;
- the conception of musical performance as a process of manifestation and

dissolution, not as a humanly-created and discrete product ;

- the conception of *tāl* structures as cyclically repeating, and the analogy between the *tāl*-cycle and the world cycle (*kalpa*).

We may note a logical distinction between the first of these points and the other two. The importance of accurate time-keeping is a result of the music's historically quasi-ritual function, and is therefore a practical and functionally-determined measure; the concepts of musical performance as process, and of musical time as cyclical, are derived from a tendency to make the music- by means of its own structure and organisation- reflect man's conception of the universe.

This important distinction reflects the historical evolution of Indian art music from an aspect of religious ritual, to a classical art tradition. Where music actually forms a part of religious ritual, its rules are determined by religious considerations, but its actual structure need not necessarily represent these concepts. It is logical that only in the case of an art-music tradition, albeit one aware of its religious roots, will the music itself embody metaphysical concepts. There can be no doubt that as Indian music has evolved, one of the most important forces influencing that evolution has been the inclination to "reveal the essence of the universe" through musical structures.

#### **The necessity for accurate time-measurement**

Indian music historically shows a strong preference for the accurate and unambiguous measurement of time. This principle derives from the role of music as a religious act,

<sup>13</sup> A number of metaphors and images used to describe musical time suggest such connections: Rowell cites the metaphor of sewing in Abhinavagupta's commentary on the *Nāṭyaśāstra*, 'Abhinavabharati'; "In AB 31:368 Abhinavagupta describes *tala* as the thread with which the garment is stitched together" [1982:29-30]. Other metaphors have been used to describe musical processes- ideas representing expansion or inflation, permutation and the mutability of form and so on (see eg. Rowell 1982:30 and Gottlieb 1985).

analogous to and ultimately derived from Vedic ritual. This view is expressed by Rowell, in his study of ancient Indian music (*gāndharva*)<sup>14</sup>;

“Like earlier Vedic rituals, from which it may have sprung, the performance of *gāndharva* was considered a sacrifice. The ritual actions, text, poses, dancing, miming and music were specified in unusual detail, and precise performance was required in order for the production to achieve its objective- *adr̥ṣṭa-phala* (unseen benefit)” [1988:141]

The ancient connection of musical performance and religious observance has left its legacy in the complicated patterns of hand gestures used in Indian music for counting time- the cheironomy. Just as every action and every word of a religious ritual must be perfectly performed in order to ensure a beneficial effect, so no effort must be spared in ensuring the correct progression of a musical performance.<sup>15</sup> Although the *tāl* structures are now much less complex than those employed in *gāndharva*, clap patterns are still a feature of most Indian classical music today.

The belief that ill effects could arise from inaccurate time-keeping, was surely instrumental in the development, from ancient times, of a rigid and unambiguous rhythmic structure backed up by a complex system of cheironomy. This is also a factor in the traditional assumption that a moderate underlying tempo should be maintained in music performance. Such a rhythmic structure are more easily maintained at moderate tempi, and conscious acceleration might be construed as a distortion of that structure.<sup>16</sup>

### The conception of musical performance as process

Much North Indian musical performance- with its gradual exposition in *ālāp*, its development, acceleration, and ultimate subsidence into the drone- can be considered to represent the Indian metaphysical concept of the creation and ultimate dissolution of matter in the universe. Not only has this analogy not escaped the imagination of Indian musicians, it has actually helped to shape Indian music practice over the course of history. Music is considered pre-existent, and its performance constitutes a process of manifestation,

<sup>14</sup>This question is discussed in detail by Lath [1978:82ff, 101ff].

<sup>15</sup>Chaudhuri [1984:6] touches on this point in citing Śaṅgadeva's "Saṅgītaratnākara" (C.13) and Kallinātha's commentary thereon, "Kalānidhi" (c. 1450). Commenting on a passage from the S.R.(5/38-39), Kallinātha explains that a second singer must assist the main singer in keeping *tāl*, because if a mistake were to occur, not only would the '*adr̥ṣṭa phala*' be lost, but a '*pratyavāya*' (ill effect) could occur (these terms are common to religious ritual).

<sup>16</sup>This will be discussed further under syllabic rhythm (1.4.2).

differentiation and dissolution; this conception of music as process rather than product has profound implications for rhythmic organisation, as we shall see.<sup>17</sup>

One of the implications of this view of music as process, is that a fragment of music is not capable of isolation in rhythmic analysis, without reference to its context in the musical process- to the tempo, to the technical focus of the music, and to the stage reached in the performance. Within the context of the *tāl*, a piece of rhythmic play (*laykāri*) is not only an artefact created and performed by the musician, but also a solution to a problem of process- how to develop a rhythmic idea and achieve a satisfactory cadence, coinciding with the start of the new *tāl* cycle- a solution which often itself evolves as the cadential point comes ever closer (as will be shown in later chapters, especially 7). Therefore these theoretical questions on the nature of musical time, the form of music and the process of music, can produce insights of applicability in the analysis of real music.

### **Tāl structures conceived as cyclically repeating**

The most commonly noted of these areas is this, the connection between cyclic *tāl* structures<sup>18</sup> and cyclic time in Hindu thought. The analogy of the *tāl* cycle with the world cycle (*kalpa*) has been observed by several musicologists<sup>19</sup>; as with the conception of music as process, the idea of cyclic rhythm has been influenced by metaphysical concepts, and the analogy is certainly not coincidental.<sup>20</sup> Moreover, the cyclicity of Indian rhythm reflects the so-called 'circularity' of Indian time perception in more subtle ways than this simple analogy suggests.

According to Indian cosmology, time is indeed cyclical not only on the levels of days, months and years, but also on the higher level of the enormously long world cycles. However, as Balslev points out, Western writers have often misunderstood and

<sup>17</sup>Rowell best puts the case for viewing the opening improvisation (*ālāp, vistār*) of a performance as representing matter, undergoing differentiation and emerging as structure in "a process of pure *becoming*" [1981b:207]. In another passage the same author writes "To [the Indian] music is pure natural *process* and process is what he values" [1989:28]. Indeed, performances are largely improvised, and musical scores- which might influence a conception of a piece of music as an integral artefact- do not play a major role in the culture (the predominantly oral nature of the music culture then may be associated with this view of music as process). See also Widdess [1977:66].

<sup>18</sup>The practical implications of this preference for cyclicity will be discussed in chapter 2; this section will concentrate on its epistemological context.

<sup>19</sup>Put succinctly here; "The cyclic organisation of the underlying *tāl* is a microcosmic parallel to the macrocosmic cycles within which Indian time unfolds" [Rowell 1981b:207]. See also Such and Jairazbhoy [1982:104-107].

<sup>20</sup>In the earliest musicological texts there is no mention of *tāl* being cyclic; as Rowell says, "I believe cyclical rhythm in the music of India to be an *effect* of a long-standing preference for cycles, not a cause" [1979:99].

misrepresented Indian cyclic or circular time, taking it to mean a “philosophy of sheer recurrence”<sup>21</sup>, and assuming that world cycles repeat themselves exactly.

In the Indian philosophical tradition however, world cycles repeat, but “the wheel of becoming, in the Indian context, does not involve a mechanical repetition of the particular/the individual, neither does it preclude salvation” [Balslev 1983:147]. Cycles are the same in type, but not in detail, and processes such as salvation unfold continuously within the framework of cyclical time.

It is this concept which is represented by musical organisation. Music unfolds in a process of continuous development and does not repeat exactly, but this development takes place within the context of a cyclically repeating temporal structure- the *tāl*. Thus the implication of the analogy is not only of the cyclicity of *tāl*, but equally of a conceptual separation between the continuous process of *rāg* development, and the recurrent temporal substructure of *tāl*; this dual structure of the music will be discussed in a quite different context later (1.2.2).

### 1.2.2: The objective analysis of rhythmic organisation

A study of this nature must clearly be founded on the understanding of indigenous or ‘folk’ concepts, and informed by a variety of perspectives on music in its cultural and historical context. However, a number of further perspectives, objective and/or empirical, also need to be considered: it may be axiomatic that the people who know most about a music tradition are its performers; but it is equally true that some of the most revealing facts, or at least their significance, are least clear to those closest to the performance. A complete analysis of any aspect of the music should therefore ideally look both from the inside and the outside, synthesising these two perspectives.

The most fundamental gain of an outsider’s perspective is the ability to look objectively at indigenous music concepts. These ideas are of fundamental importance not only for what they tell us about the music, but also in their own right: they tell us not only about the way music is, but also about how it was or how it should ideally be. In the case of *tāl* and *lay*, the modern concepts reflect not only modern practice, but also the

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<sup>21</sup>Toynbee [1972:157-8], quoted in Balslev [1983:149].

significance of these concepts in earlier historical periods. The importance attached to tradition and historical continuity in Indian culture prevent musicians and musicologists from acknowledging the full extent of musical change.<sup>22</sup>

Taking a broader view, it is both legitimate and informative to ask whether Indian concepts can be translated into cross-cultural, ethnomusicological concepts. In explaining *tāl* as a model of metric structure- in 'translating' the concept- our understanding of the indigenous concepts is broadened (see 1.4, chs. 2 & 3). The benefit will be felt both ways moreover: the findings of Indian music studies may enhance those of other ethnomusicological studies, and help us move to more sophisticated ideas of rhythmic organisation in general. Again, both these possibilities will be demonstrated: study of Indian rhythm must contribute to the development of 'universal' theoretical models of rhythmic organisation, if indeed such models may be devised; yet on the other hand non-indigenous ideas of metric structure, and particularly of the implications of tempo, suggest that *tāls* are considerably more heterogeneous and functionally diverse than would be thought without this perspective.

Finally, the use of empirical data, although limited in applicability, is of some importance. In this study the most useful application is in the study of *lay* and *laykārī*- tempo, rhythmic density and the variation of one or both- where measurements from performance put theoretical discussion of these phenomena on a firmer basis, and consequently make such speculation more reliable. This is evidenced by the diversity and range of the data (see ch. 3); what they tell us about rhythmic organisation in North Indian music could in many cases not have been predicted solely from the indigenous theoretical model.

### **Ethnomusicological and psychological perspectives on rhythmic organisation**

A number of Western writers have proposed general theories of rhythmic organisation. In particular, the theories proposed by Sachs on the difference between 'additive' and 'divisive' rhythm have some relevance to Indian music. He distinguished divisive rhythm, in which time is divided into equal parts (also called 'qualitative'), from additive rhythm, made by adding unequal time spans (also called 'quantitative') [1953:24-26, 93].

<sup>22</sup>Cf. Pollock [1985].

Sachs saw Indian rhythm as additive because of the addition of groups of different lengths in many *tāl* structures. Powers follows him in asserting that “an *āvarta* is not in principle divisible into subsections of equal length but has rather to be assembled by adding up its *vibhāg* or *aṅga*.” [1980:119]. This view is however questioned by Widdess, who suggests that apart from a limited number of irregular meters, “the musical rhythm of Indian art-music is predominantly ‘divisive’ rather than ‘additive’.” [1981b:133].<sup>23</sup>

The insight Sachs showed in his attempt to define universal issues is instructive; although he misjudged the rhythmic diversity of Indian music, these categories of rhythmic organisation will nevertheless be seen to be applicable to some extent to the North Indian tradition. In particular, in developing a theoretical model of rhythmic organisation, it is useful to distinguish quantitative factors from qualitative (see 1.4).

A related, if not identical, distinction is made by the psychologist Fraisse, who has researched widely on rhythm perception;

“Is rhythm the arrangement of durable elements, or is it the succession of more or less intense elements.....both types of organisation exist” [1982:151]

There is some similarity between these categories and Sachs’ qualitative/divisive (‘a succession of more or less intense elements’) and quantitative/additive (‘an arrangement of durable elements’)- once again, this suggests distinctions which may be applied to North Indian music. But is rhythm necessarily conceived as either a succession of elements, or an alternation of weaker and stronger? Clynes and Walker suggest a limitation in such ideas, putting forward the idea of a rhythmic pulse which is preprogrammed as a unitary event;

“...the iteration of a rhythmic pulse in general represents a unitary event preprogrammed not as an alternation of activity and rest, as musical notation implies, but as a replication of a single dynamic form accurately stored in memory” [1982:176]. They continue; “...analysis in terms of ‘strong’ and ‘weak’ alone cannot do justice to the subtleties of relative timing, accent, and the details of form of the pulse, which determine its actual character” [1982:192].

<sup>23</sup> Another distinction made earlier by Sachs [1943:41-43], was between the categories ‘logogenic’ and ‘melogenic’; he found speech-derived rhythm (logogenic) more uneven, more constant in tempo and flatter in hierarchy than that derived from music (melogenic). He also introduced a concept of numerical rhythm, which is distinguished by a counted number of syllables, the “absence of meter” and the “absence, scarcity or vagueness of accents” [1953:26, 57]. In his later work Sachs talks of three types of rhythmic organisation- purely numerical; relying on actual or suggested stresses; and meter (ie. additive rhythm) [1962:113ff].



These ideas have some relevance when it comes to the importance of the *thekā*- the characteristic drum pattern of a *tāl*.<sup>24</sup> It is important in discussing the 'qualitative' aspect of metric organisation, to recognise that this is more subtle than simple variations in dynamic stress.

Another important concept we must consider which has profound implications is that in a fundamental sense all metrical music has a dual structure, in which rhythm is superimposed on an underlying beat. This is a common musical principle, as Dowling and Harwood point out;

"The dual structure of underlying beat and superimposed rhythm is fundamental to the cognitive organisation of music..." [1986:186]

This idea is of fundamental importance in understanding Hindustānī music's rhythmic organisation. The fact that in Indian music what underlies the superimposed rhythm is not a simple beat but a complex metric structure (the *tāl*) does not obscure the fact that this observation applies equally well in this context.<sup>25</sup> This idea of music's dual structure is an integral, if implicit, part of conventional *tāl* theory, and will therefore be integrated into the theoretical model developed below. It is a credible assumption that *tāl* is in effect the conceptual substructure upon which rhythm is overlaid. In this sense, it makes sense to talk of the relationship between the *tāl* and the 'surface' rhythm, and how (if at all) the *tāl* organises or generates that rhythm.

This section has outlined a number of perspectives to which reference will be made later. The remainder of this chapter is devoted to an outline of the North Indian *tāl* system, and a preliminary analysis of the information it provides about indigenous concepts of rhythmic organisation, and about musical structure and process in general. Limitations in the accepted theory are addressed in 1.4, which develops the thesis that a number of different modes of rhythmic organisation are represented in modern North Indian music.

<sup>24</sup>As Ghosh writes, "each tāla.....expresses a particular rhythm....and it is not just 'keeping time'" [1968:56].

<sup>25</sup>In a different context, Becker writes that "Repetition of one element while another element changes is a fairly universal way of structuring musical events" [1981:163], while Rowell, writing on early Indian music, describes it as a "counterpoint- audible events superimposed over a conceptual substructure" [1988:143].

### 1.3: Tāl theory as a model of rhythmic organisation

The context, aims and perspectives of the present study have been set out above. The purpose of this section is to introduce the rudiments of the concepts of *tāl*, *lay* and *laykāri*, in order to determine what they tell us about the rhythmic organisation of North Indian music. It will become clear that in some cases these concepts describe, not so much what music is, but what it was or what it should be. It will then be necessary to look at the limitations of *tāl* theory (as currently formulated) as a tool for practical rhythmic analysis (1.3.2), and then at how this model of rhythmic organisation may be modified and/or extended to overcome these limitations. A more detailed analysis of the *tāl* system in practice follows in chapter 2; the purpose of this section is to introduce basic *tāl* concepts, and discuss their theoretical implications (1.4).

#### 1.3.1: An outline of tāl theory

All North Indian music may be classified as either *nibaddh* (bound by *tāl*) or *anibaddh* (unbound); all metrically organised music falls into the first category, and is set to one of a number of authorised metric frameworks called *tāls*.<sup>26</sup> *Tāls* are conceived as cyclically recurring patterns of fixed length. The overall time span of each cycle (*āvart*) is made up of a certain number of smaller time units (*mātrās*), and these *mātrās*<sup>27</sup> are organised into sections (*vibhāgs* or *aṅgs*). Thus in principle the *tāl* is a hierarchical structure organised into three temporal levels, from the smallest time units (*mātrā*), to the section (*vibhāg*), to the complete cycle (*āvart*). The *tāl* cycle may be conceived as either a sum of its *vibhāgs* (or *mātrās*), or as a single unit divided into smaller time units.<sup>28</sup>

<sup>26</sup> *Tāl* is a system for metric organisation; however there is a distinction to be made with the Western concept of "metre", which is taken here to mean the internal temporal organisation of a piece of music. Metric organisation in the Western tradition is implicit in the music, and despite the notation of time signatures, the analysis of functional metric structure is often ambiguous. In the Indian tradition, metric organisation is explicit: surface rhythm overlays *tāl*.

<sup>27</sup> *Mātrā* may be translated as "beat" in most contexts, but I have tried to avoid using the latter word as there are circumstances in which it may cause confusion. The reasons for this confusion will become more apparent in 1.4.3 and ch. 3.

<sup>28</sup> Cf. additive and divisive rhythm, 1.2.3.

Each *vibhāg* is marked at its start by a hand gesture, either a clap (*tālī*) or a wave (*khālī*), the sequence of which makes up a 'clap pattern'<sup>29</sup> which may be employed by performers and/or listeners to count out the *tāl*. The first *mātrā* of the cycle is designated *sam*.<sup>30</sup> Each *tāl* moreover has a *ṭhekā*—a basic recognisable pattern of strokes (*bols*) for the *tablā* or *pakhāvaj*.<sup>31</sup> These features are illustrated below, using the example of the 10-*mātrā* *jhaptāl*;

*Jhaptāl* is a *tāl* comprising cycles of 10 *mātrās*, which are divided into four *vibhāgs*, two of 2 *mātrās* and two of 3 *mātrās*, in the sequence 2+3+2+3. The clapping pattern consists of hand gestures on each *vibhāg*, as follows; *tālī* + *tālī* + *khālī* + *tālī* (clap+clap+wave+clap). The *vibhāgs* are given notational symbols as follows; 1st *tālī* (*sam*) = X, 2nd *tālī* = 2, *khālī* = 0, and 3rd *tālī* = 3 (giving in all: X 2 0 3— see the preliminary 'Note on music notations'). The *ṭhekā* is made up of *bols*, that is strokes of the *tablā* or *pakhāvaj*, which are represented by onomatopoeic syllables ("dhin, nā" etc).<sup>32</sup> The basic *ṭhekā* of *jhaptāl* is as follows, in Indian notation with *tāl* indicators.

*jhaptāl* : 10 *mātrās*, 2+3+2+3

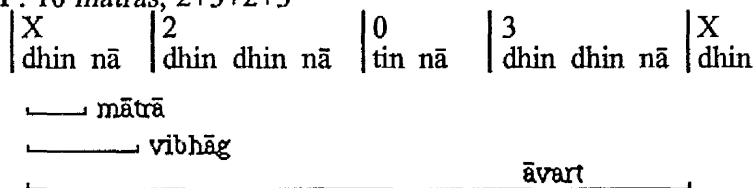


fig 1.1: *Jhaptāl* in *sargam* notation, showing structure and *ṭhekā*.

This introduces the principal concepts and terms of modern North Indian *tāl* theory. In practice, *tāls* are usually cited in written form as in the figure above; they are taught orally by reciting the *ṭhekā* to the accompaniment of the clap pattern. (A list of the most

<sup>29</sup>This term is borrowed from Widdess [1981b].

<sup>30</sup>*Sam* is marked by a *tālī* in all *tāls* except *rūpak tāl*, where it is signified by a *khālī*.

<sup>31</sup>A number of musicologists use the term *thapiyā* as the *pakhāvaj* equivalent of the *tablā ṭhekā* (eg. Srivastav 1980:55), however there is some dispute as to whether the two share the same function. See Stewart [1974:86] and Bhowmick [1981:56].

<sup>32</sup>The variety of *bols*, method of production and naming vary between the different *tablā* and *pakhāvaj bājs* (see eg. Gottlieb 1977, Stewart 1974, Kippen 1988). The main drum *bols* may be illustrated as follows; those shown in bold are *bharī bols*, the remainder are *khālī*.

		<b>tablā</b>	<b>pakhāvaj</b>
(right hand)	undamped	tā/nā, tin, tū etc	din, tā
	damped	tetē	tīṭa
(left hand)	undamped	ge/ghe	ge
	damped	ke/ka	ka
combination (r.h. + l.h.)		<b>dhā</b> (tā+ghe), <b>dhin</b> (tin + ghe), tirakita	<b>dhā</b> , tīṭakitagadigana

common North Indian *tāl*s is given in 2.1.1, with more specific discussion of these features.)

The next most important concept in Hindustānī rhythmic theory is of *lay*, which governs the speed of the music. Historically, *lay* refers to the rate of succession of the *tāl* structure (ie. tempo), but often in practice is used to describe what we would call rhythmic density (see ch 3). Both *lay* and the related concept of *laykāṛī*- usually translated as rhythmic play or rhythmic variation, but dependent on the idea of surface rhythm being generated directly from the *tāl* structure by means including subdivision of the *mātrā* (see ch 5)- have important implications for the ways in which rhythmic organisation is understood in North Indian music.

### 1.3.2: The implications of *tāl* theory

Even this brief introduction to *tāl* theory- and most general works on Indian music barely go further than this- tells us a great deal about assumptions on rhythmic organisation within North Indian music culture. The main points to be noted are as follows;

- The principles of metric organisation are the same for all *nibaddh* music (with only the choice of particular *tāl* and *lay* varying);
- *nibaddh* music has a dual structure, whose explicit metric element is manifested as the *tāl*;
- this metric structure (*tāl*) repeats cyclically;
- time is kept by means of clap patterns, which represent the structure of the *tāl* cycle;
- each *tāl* has an associated *ṭhekā*, or standard drum pattern;
- the concept of *lay* governs the tempo (ie. the rate of succession of the *tāl*), while that of *laykāṛī* governs the generation of rhythmic variation by means of subdivision of the *tāl*'s time-spans.

These then are some of the assumptions of conventional *tāl* theory. They cover not only the way *tāl* works (it is cyclical, it can be manifested by clap patterns and/or *ṭhekā*), but also more fundamental assumptions- that music should be organised by an explicit and conceptually distinct metric structure, that this should be done accurately and

unambiguously, and that all *nibaddh* music is organised by the same system. The figure below illustrates the dual structure implied by these assumptions, *tāl* underlying surface rhythm ;

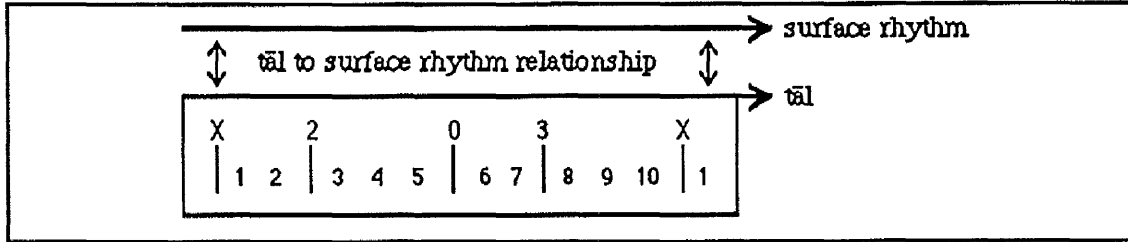


fig 1.2: A theoretical model for rhythmic organisation, incorporating *tāl* and its relationship with surface rhythm.

### Limitations of *tāl* theory

One might be forgiven for assuming that such a multi-faceted, yet apparently coherent, model would adequately describe North Indian music's rhythmic organisation. There are however a number of areas in which it fails to do so; its very coherence is in some ways illusory.

Firstly we may question the assumption that all *nibaddh* music is organised rhythmically in the same way. If this were so, one would expect clap patterns and *ṭhekās* to perform more or less the same functions in all cases. This is manifestly not so: clap patterns are not used at all at very slow tempi (eg. in *ati-vilambit khyāls*), and rarely in lighter styles of music such as *ṭhumrī* and *dādrā*; *ṭhekās* on the other hand may be used either to the exclusion of any other form of accompaniment (eg. in *vilambit khyāl*), or barely used at all (eg. in *dhrupad-dhamār*).

Therefore we must look at the functions of the clap pattern and *ṭhekā* in practice, and at how the variation of rhythmic parameters (such as tempo), alters those functions. The relationship between these two phenomena, the clapping pattern and *ṭhekā*, is also unclear: it seems in some *tāls*- such as *jhaptāl*, above- that the so-called *khālī bols* ("tā, nā, tin" and so on) occupy *vibhāgs* marked by the *khālī* gesture. If a correlation is assumed on this basis however, it is not borne out in other *tāls*, as will be seen in 2.2.3.

There appear moreover to be different types of *tāl*- some are symmetrical, with the second half of the cycle marked by the *khālī* (as in the case of *jhaptāl* above), and some are not; some are played on the *tablā* and some on the *pakhāvaj*, some are characterised by

pitch modulation of the *bāyā* (left-hand drum head) and some not.<sup>33</sup> *Tāls* may also be associated with particular genres and forms, and most may only be played within a limited tempo range. There is at least *prima facie* evidence for saying that the apparent uniformity of the *tāl* system, conceals differences between the types of rhythmic organisation employed in the different genres of North Indian music. A more detailed study of the system is therefore justified.

Other issues need clarifying too, in two important and related areas. Firstly, there appears to be no theoretical concept governing the relationship between *tāl* and surface rhythm except that of *laykāri*; yet this concept only applies in particular circumstances-when the *mātrā* is subdivided at a definite rate, and the surface rhythm is derived from that rate of subdivision, usually as an aspect of rhythmic play (see ch. 5). There are many types of music which may be described as organised or generated by '*laykāri*', as the term is used somewhat flexibly in practice, but they do not add up to the whole of Hindustānī music. Therefore a significant amount of *tāl*-bound music lacks a theoretical basis for the relationship of *tāl* and surface rhythm, which is an important omission from the theoretical model.

Secondly, there is no theoretical concept sanctioning acceleration of the *tāl*, despite the fact that as we shall see, such acceleration is a very widespread phenomenon in North Indian music (see ch. 3). Historically it has been assumed by Indian musicologists that if and when music speeded up, it did so through an increase in rhythmic density alone, since the tempo of the *tāl* was by implication constant. This is no longer a fair assumption to make, yet North Indian *tāl* theory, while not explicitly denying the possibility of acceleration, has certainly not integrated the phenomenon into the received theoretical model.

These last two points suggest that certain features of *tāl* theory may relate to outdated musical concepts, or at least that old concepts may have somewhat different significance in the late 20th century, to that which they had when initially developed. A model of *tāl* as set out in 1.3.1 above- with tempo assumed to be constant, all acceleration achieved through rhythmic density alone, and a clearly defined relationship between surface

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<sup>33</sup>See Stewart [1974:93ff].

rhythm and *tāl*- is internally coherent. It is also the model which is most clearly suggested by the concepts of *tāl*, *lay* and *laykārī*. However, we must acknowledge that, while *tāl* theory is sufficient for didactic and most descriptive purposes within Indian music culture, it fails to explain a number of important rhythmic phenomena; *tāl* theory is in fact more coherent than the practice it describes.

In order to establish a truly representative analytical model of rhythmic organisation for Hindustānī music, we must be prepared to modify and to extend conventional *tāl* theory, both to accommodate the enormous diversity in the tradition, and to bring that theory up to date. Working with the concepts outlined in 1.3.1, we must develop models of *tāl* as metric structure and of the relationship between *tāl* and surface rhythm<sup>34</sup>; most importantly, we must integrate an understanding of *lay*- the implications of tempo and acceleration- with these models.

It will be possible, by referring to some of the perspectives outlined in 1.2, to establish not only a picture of the rhythmic organisation of North Indian music in modern practice, but also of the status of the concept of *tāl*, and what it tells us about the way music is, the way it was and has developed, and the way Indians feel it should be.

#### 1.4: Extensions and modifications to the *tāl* model

We have considered a variety of perspectives from which we may look at rhythmic organisation, establishing both the primacy of indigenous concepts, and the necessary balance of objective and empirical research, in building up an accurate and coherent theoretical model. Having established some areas in which conventional *tāl* theory may be limited as an analytical tool, and may present a less than accurate reflection of the music, the purpose of this section will be to suggest refinements to *tāl* theory in two ways.

Firstly (1.4.1) a model of *tāl* as metric structure will be suggested- incorporating ethnomusicological perspectives- which will permit the acknowledgement of the importance of tempo and its variation. Secondly (1.4.2-4) we must look at the diversity in both

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<sup>34</sup>The relationship between *tāl* and surface rhythm can be understood both as the organisation of surface rhythm by *tāl* and as the generation of surface rhythm using *tāl* as the deep-level structure (to use the common linguistic analogy).

rhythmic style and rhythmic organisation in Hindustānī music. Finally (1.4.5), by reviewing the results of these studies, we shall be able to establish a unified model of North Indian rhythmic organisation.

#### 1.4.1: Tāl as metric structure

*Tāl* is a system for organising musical time, and this organisation involves two major aspects. Firstly, a succession of time spans is measured out; and secondly, these time spans are ordered in a hierarchical relationship. Thus, while it may be other things as well- and we must leave aside for the moment the importance of cyclicity, and the variation of drum timbres in the *theḱā*- these two principles suggest that *tāl* is a special form of metric structure, defining a quantitative hierarchical structure.

Metre has proved a troublesome area for analysis in Western musicology, and (on the rare occasions it has been studied) in ethnomusicology. However, important work by Lerdahl and Jackendoff [1983] not only puts the metric analysis of Western music on a firmer basis, but may also provide a platform for similar work in other musics. By acknowledging that a hierarchical relationship between beats is implicit in the concept of metre, these authors were able to devise a simple but potent form of metric notation. In this system, two or more pulse levels are recognised in the music, and each pulse level is marked by a row of dots (below the main music notation). Beats which are 'stronger' within the hierarchy thus have<sup>a</sup> deeper column of dots than those which are 'weaker' (see fig 1.3 below).

This analysis also generated a new perspective on the meaning of 'tempo'- the perceived tempo being the rate of succession of one of these pulse rates, selected according to psychological and/or physiological criteria.<sup>35</sup> It will be instructive to apply this type of analysis to North Indian *tāl* structures, for several reasons. It will clarify the way in which *tāl* functions as metric structure, the perception of tempo (hence the concept of *lay*), and the relationship of *tāl* to surface rhythm (particularly in *laykāri*). The figure below applies the dot notation system to *jhapṭāl* at a medium fast tempo (c. 100MM).

<sup>35</sup>Lerdahl and Jackendoff define such a rate as the *tactus*; "The listener tends to focus on one (or two) intermediate level(s) in which beats pass by at a moderate rate. This is the level at which the conductor waves his baton, the listener taps his foot, and the dancer completes a shift in weight....Adapting the Renaissance term, we call such a level the *tactus*." [1983:21]





therefore it is of considerable importance. This prototypical model of *tāl* as explicit metric structure will be modified and extended in the text which follows.

#### 1.4.2: Syllabic style and a 'syllabic' model of rhythmic organisation

Implicit in the *tāl* model outlined above (fig 1.4), is the idea of a close relationship between the *tāl* and the rhythm of the music organised thereby (the surface rhythm). This relationship is defined by the idea of *laykāri*, by which the surface rhythm patterns are generated by the execution of a number of mathematical operations on the *tāl* structure- division of the pulse, arrangement of rhythmic pulses into groups and phrases and their manipulation and permutation- which will be described in detail in chapter 5.

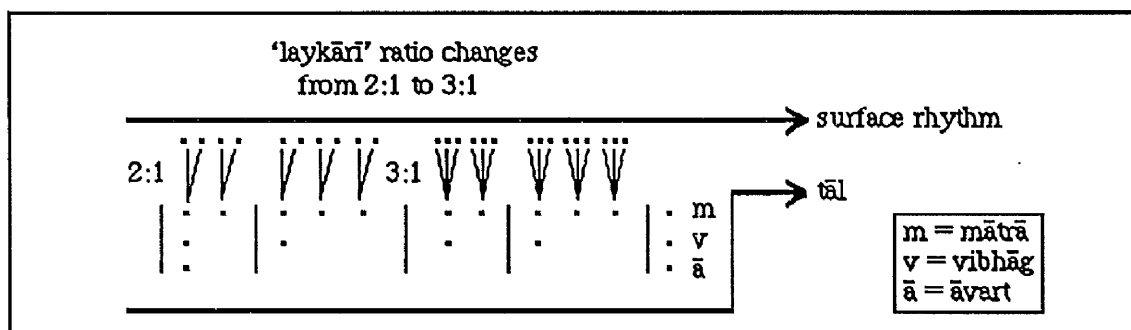


fig 1.5: An illustration both of how the *mātrā* pulse is subdivided in *laykāri*, and of how an increase in the rate of subdivision (in this case 2:1 to 3:1) is used to accelerate the surface rhythm.<sup>38</sup>

Just as this theoretical model of *tāl* applies in practice to some but not all North Indian music, so the implicit '*laykāri*' model of rhythmic organisation (illustrated in fig 1.5) can be regarded as a special case. It is appropriate to some but by no means all North Indian music; its theoretical preeminence suggests that it may have applied more widely in the past. For these reasons it is reasonable in the first instance to look at this model as an 'ideal', and to treat other modes of rhythmic organisation as deviations from this ideal.

In order for this mode of organisation to work, it is implicit that the surface rhythm can be regarded as derived from a stream of distinct pulses (eg. the top row in fig 1.5); if it is not and cannot be, then this model becomes irrelevant. The North Indian music which fits this criterion, does so because of the differentiation of notes as the building blocks of the

<sup>38</sup>Cf Ranade "Temporary variations in the strict form of the Tāla-measure are made by changing from a time of 'two-s' to a time of 'three-s' ....an artiste must not take any liberty with the time-measure or with the Laya, in particular." [1951:116-117]. The author is referring to the change in subdivision rate (*laykāri*) illustrated in fig 1.5.

musical structure, which is facilitated by the employment of *bols*. *Bols* are syllables- sung text or *sargam* (solfège) syllables, or the syllables used to represent note names or instrumental strokes in teaching- and the idea that music is built up of distinct units, each of which consists or may be represented by a spoken syllable (*bol*), is of great importance in Indian music. This work will call the rhythmic style favoured by this concept of music 'syllabic'.<sup>39</sup>

Syllabic rhythmic style implies a particular model of rhythmic organisation; this may also be termed 'syllabic'. Under the syllabic model of organisation music is conceived as comprising distinct units, which have temporally definable attack points as well as other qualities of tone, timbre, dynamics and so on.<sup>40</sup> These units are called *bols*, because they constitute or can be represented by spoken syllables.

The basic characteristic of this type of rhythm is that it is based on syllables; in vocal styles such as *dhrupad* the use of the text-syllables is all important; while instrumental styles tend to be dominated by stroke patterns. Rhythmic variety is produced by the manipulation of these *bols*, as we shall see later (especially ch. 7).

There is a strong tendency in syllabic styles for the structure of the *bandiś* (composition) to be well defined. This is illustrated in the most syllabic of vocal forms, *dhrupad*, although a certain amount of latitude is always allowed for expressive nuance, the position of each syllable of a *dhrupad bandiś* within the *tāl* cycle is fixed. *Sitār gats* show a similar level of definition; the most common *gat* type, the *masītkhānī*, is defined by the sequence of *sitār bols* and its relationship with the *tāl*.<sup>41</sup>

We will see that this model retains some relevance in North Indian music, despite losing the dominance it appears to have once had. We must first look however at two ways in which this model has been modified in modern music: firstly by decreasing the tempo, which breaks down the *tāl* to surface rhythm correlation, favouring a 'melismatic' style and

<sup>39</sup>There is evidence that this syllabic conception of music was predominant in India until relatively recent times (probably the last 150-200 years), and that this correlates with the traditionally syllabic nature of much Indian art, and language. Rowell writes; "There is a profound relationship between the phonetic structure of the Sanskrit language as described by the ancient grammarians, the syllabic Indian scripts, and the diverse ways in which syllables have dominated the music and musical thought of India since early times" [1988:149].

<sup>40</sup>Note the specific sense in which the term "syllabic" is employed here; the following quote illustrates a slightly different usage. "As for syllabic....we are dealing with rhythmic effects whose sole principle is the variable quantity of the syllable,....the rhythm takes its source from the metre and is only to be explained by it": Brailoiu, writing on Rumanian folk rhythm [1984:168].

<sup>41</sup>See ch. 8.

a distinct 'melismatic' model of rhythmic organisation; and secondly by a more subtle modification of the model brought about by the increasing importance of the *ṭhekā* and the use of the *ṭablā* drum (a hybrid model).

#### 1.4.3: Melismatic style and a 'melismatic' model of rhythmic organisation

One of the most popular forms of Hindustānī vocal music today, the *vilambit* or *atī-vilambit* (slow/ very slow tempo) *khyāl*, appears in many of its manifestations to be organised in a way quite distinct from that of the syllabic model outlined above. There is apparently no close relationship between the *tāl* and surface rhythm; nor is that surface rhythm conceived as a string of discrete units or *bols*. On the contrary, the melodic style is highly melismatic (many notes are sung to one text syllable, if indeed text is employed at all), and their individual articulation points are not clearly defined temporally.

In general the *tāl* to surface rhythm relationship in music of melismatic style is neither as simple nor as clearly definable as in the syllabic model. That is not to say that no such correlation exists, but the type of mathematical relationship outlined above clearly does not apply here. The development of such a melismatic style in *nibaddh* forms marks a departure from previous Indian musical tradition. It is profitable to look at how and why this style developed, in order to understand it in historical context; this will confirm that melismatic organisation is a distortion of the traditional Indian 'syllabic' mode.

This style of music has developed, almost certainly within the last 100 years, for specific aesthetic reasons. The musicians who took the lead in this development- *khyāl* singers Abdul Wahid Khan (d. 1949) and later Amir Khan (1912-1973),<sup>42</sup> did so because they found the conventional modes of rhythmic organisation limited their expressive imagination. They developed a style of singing in which, by slowing down the tempo considerably, they created 'space'- ie. longer time spans- in which to develop arguably the most emotionally expressive form of classical singing heard in North India.<sup>43</sup>

<sup>42</sup>These dates from Wade [1984a:195, 265].

<sup>43</sup>Deshpande writes "Influence of Wahid Khan's *alapī* is so profound on Amir Khan that in slow *khyāl* he is almost a replica...The tempo is unusually slow and therefore the *laya* element is unobtrusive and can be safely ignored except at the *sam* beat or thereabouts" [1973:66]. Wade measured Abdul Wahid's Darbārī Kānhrā in *jhūmrā tāl* at  $1/4$  *mātrā* = 84, ie. *mātrā* = 21MM [1984a:211]. A similar deceleration in the performance of *kaharvā* and *cāñcar tāls* occurred in *ṭhumrī* (see Manuel 1989:83).

Deceleration of the *tāl*, coupled with the expressive and melismatic singing style, broke down the conventional model of rhythmic organisation. Indeed the changes brought about were so radical that it is remarkable that this type of music is still performed in *tāl*, and that *tāl* has proved sufficiently adaptable in practice to permit such changes in its function.

Melismatic music may be characterised as follows. The *tāl* measures out a long time span (c. 40-70 sec) into equal time units (usually 12, 14 or 16 *mātrās* in *vilambit khyāl*), and the point reached in the cycle is signalled by the *tablā*'s *thekā*.<sup>44</sup> In this time span melodic phrases are developed, showing various degrees of coordination with the *thekā* and the *tāl* structure. The area where *tāl* and melodic rhythm show the greatest coordination is around *sam*, where a section of the fixed composition (the *mukhṛā*) is repeated. Although each phrase will still begin with a *bol* or text syllable, they never acquire the rhythmic significance they do in syllabic styles. This mode of rhythmic organisation is illustrated graphically below;

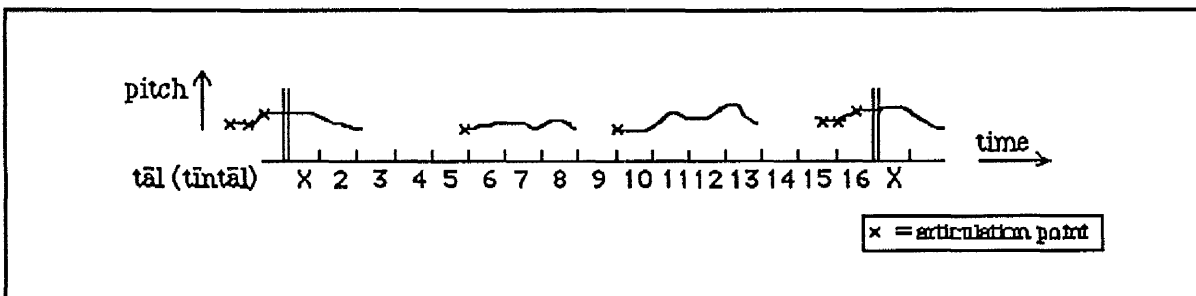


fig 1.6: A graphic illustration of a 'melismatic' model of rhythmic organisation.

Melismatic rhythm could be described as *rāg*- or melody-oriented- the simplest building blocks of the music are the melodic patterns specific to each *rāg*. Therefore each note need not be articulated with a new *bol*; a singer may stretch one text-syllable melodically to a considerably lengthy and complex melodic pattern, an effect imitated by the *mīṇḍ* produced on the *sitār* and other instruments.<sup>45</sup> A 'melismatic' rhythmic style predominates in much *vilambit khyāl* (depending on the *gharānā* or individual style),

<sup>44</sup>On the role of the *tablā*, Bhowmick has written "While accompanying with a 'Bādā-khayāl' of long durations Ek-tāla (48 beats), Jhumrā-Tāla (56 beats) and Tilvārā-Tāla (64 beats), a *Tablā* accompanist loses the charm of the music if he is made to perform a dull game of enumeration" [1975:40]

<sup>45</sup>*Mīṇḍ* is a technique in which pitch is varied by means of lateral deflection of the playing string along the fret.

*ṭhumrī* (in modern *bol banāo* style, see 4.4.2), and to some extent in instrumental styles based on *khyāl* or *ṭhumrī*.

#### 1.4.4: The *tablā* *ṭhekā* and a hybrid model of rhythmic organisation

We must now consider more subtle changes to the syllabic model; changes which have established a hybrid mode of rhythmic organisation, which is current in most genres of Hindustānī music today. Broadly speaking, these changes are associated with the increased importance of the *ṭhekā* in modern *tāl*, and the associated rise of symmetrical *tāl* structures and of the importance of pitch modulation in the drum patterns. All these changes were brought about by the adoption of the *tablā* as the accompanying drum for most genres of Hindustānī music, and the development of its style and repertoire.

These issues are addressed in Stewart's thesis [1974]: her account of the development of the *tablā* and its repertoire, and its rise to preeminence in North Indian music over the last 150-250 years,<sup>46</sup> is also the the most important analytical study of *tāl* attempted to date. Stewart not only distinguishes differences in techniques and repertoire between the *tablā* and *pakhāvaj* (the older barrel drum still used to accompany *dhrupad-dhamār*, and a close relative of the South Indian *mṛḍangam*). She also distinguishes between different *tāl* types, broadly associated with either of these two drums, and argues that the *tablā* has acted as an agent of an alien rhythmic system (basically Middle-Eastern in origin), and that its adoption has entailed considerable changes in the North Indian rhythmic system.<sup>47</sup>

Stewart's 'traditional Indian', *pakhāvaj*-based rhythmic system, is characterised as follows: the *tāls* have asymmetrical structures marked by agogic accents (ie. some *vibhāgs* are longer than others<sup>48</sup>), the drum plays elaborative patterns rather than a *ṭhekā*, and these *tāls* are subject to divisive manipulation (cf. *laykārī*). This model is contrasted with a so-called 'alien', *tablā*-based rhythmic system: *tāls* are characterised by the dynamic, timbre

<sup>46</sup>See Stewart [1974:7].

<sup>47</sup>Although Stewart's thesis is for the most part convincing, her characterisation of the *tablā*'s rhythmic system as non-Indian is an exaggeration; moreover she ignores the possibility that her "traditional Indian" rhythmic system may have absorbed influence from Persia and Central Asia in medieval times (ie. pre-18th century). However this is not the place for a review of Stewart's work as a whole.

<sup>48</sup>Cf. "additive rhythm", 1.2.2.



and pitch variations of the *ṭhekā*, having symmetrical structures and being varied not divisively but by the interpolation of extra strokes (*bols*).<sup>49</sup>

Comparing these characterisations with the 'syllabic' model described above, there seems to be a correlation between that and Stewart's 'traditional Indian' system. Looking back at the syllabic model of rhythmic organisation outlined in 1.4.2, it is striking that this model covers all major aspects of rhythmic organisation in a coherent manner, without integrating the concept of *ṭhekā*. Clearly this prototypical syllabic model and Stewart's 'traditional Indian' system are essentially the same thing, their characterisations arrived at by two different types of research. Moreover there is no reason to doubt her argument that *ṭhekās*, pitch modulation and symmetrical *tāl* structures were adopted via the *tablā*, effectively within the last 200 years.

Each of these three 'new' phenomena associated with the *tablā*- the characterisation of the *tāl* by *ṭhekā*, the introduction of pitch modulation and the development of symmetrical *tāl* structures- may coexist with the tenets of syllabic organisation (dual structure, explicit and hierarchical metric structure marked by clap patterns, generation of surface rhythm from *tāl* structure). This they do in practice, and in fact a hybrid model of rhythmic organisation has evolved (and continues to evolve), with these new features superimposed on an older rhythmic system of which they are not a prerequisite, but with which they may coexist. This hybrid model of rhythmic organisation may be called "metro-syllabic", taking account of the greater degree of qualitative differentiation between beats.

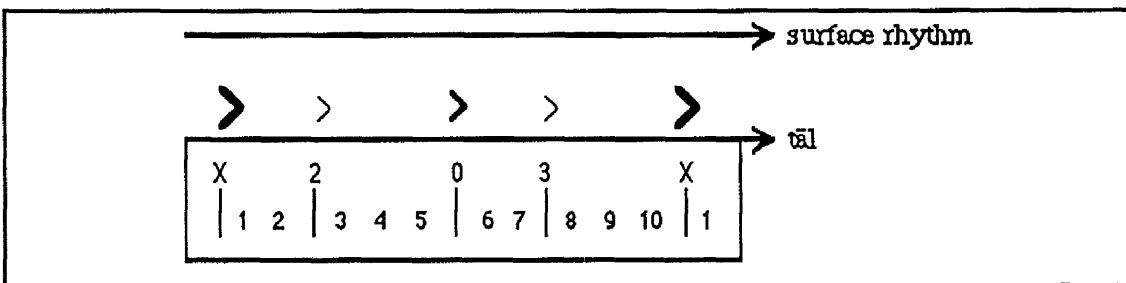


fig 1.7: In this hybrid model *tāl* is not only a quantitative but also a qualitative hierarchy, as illustrated by the arrows, marking accents of different weights.

<sup>49</sup>See Stewart [1974:xvii, 129 etc]. This idea of a difference in rhythmic styles between *pakhāvaj* and *tablā* is given another dimension by Gottlieb, who suggests a broad distinction between the more *pakhāvaj*-influenced *tablā* styles (especially Banāras and Pañjāb), and the rest. These two styles are the most rhythmically complex, using more cross-rhythms and *laykārīs* using divisions of 5, 7 and 9, amongst others [1977:79].

This hybrid model is closely related to the syllabic model outlined above, but modified by the prominence of the *tāl*'s accentual pattern and character, as expressed in the *ṭhekā*. The *tāl*'s characteristic accentual pattern is called its *chand*, a term which may also be used to describe any accentual rhythmic pattern (see ch. 5). Qualitative distinctions between *mātrās* are not expressed just as differences in drum timbre; they are felt to be weighted, and have more or less structural importance. One way of achieving this is by dynamic stress, another by lengthening the more important beats.<sup>50</sup> This lengthening, or agogic accent, is not perceived as such, but rather as an accent which enhances the life of the *tāl*.<sup>51</sup>

This model represents a hybrid of pre-*tablā* syllabic rhythmic organisation with the concept of *ṭhekā* (and in some cases symmetrical structure and pitch modulation) which the *tablā* introduced. In many respects it retains the features of the old *tāl* system, yet it cannot be regarded as a purely quantitative mode of organisation; with the addition of the *ṭhekā*, it becomes a qualitative hierarchy of beats, and this is a significant modification.<sup>52</sup>

#### 1.4.5: Summary: a unified model of rhythmic organisation in North Indian music

Three conceptually distinct models of rhythmic organisation have been outlined, which are called here syllabic, melismatic and metro-syllabic. The syllabic model is associated with a syllabic rhythmic style, the melismatic model with a melismatic rhythmic style; the latter 'hybrid' model acknowledges the influence of the *tablā*'s *ṭhekā* on the earlier syllabic paradigm. These models are presented in the form of theoretical constructs, and it remains to show in detail how these models contribute to an analytical framework of North Indian rhythmic organisation.

The theoretical model implied by the traditional Indian rhythmic concepts- *tāl*, *lay* and *laykāri*- is described here as syllabic, since it is logically dependent on a conception of music as a stream of distinct units, capable of representation by spoken syllables (*bol*s). *Tāl*

<sup>50</sup>See Jairazbhoy's timing of *tūtāl* [1983:117ff]. Gottlieb writes that "Chhand is an important characteristic of gharānā style as it pertains to the distinctive manner in which the rhythmic patterns are varied slightly in performance from their strictly measured divisions of timing" [1977:81].

<sup>51</sup>Ginde suggests that modern *vilambit khyāl* is sung in *tāls* lacking *chand*, to the extent that the choice of *tāl* is unimportant. He relates *chand* to the quality of 'vazan' (weight)- a concept which can also be applied to *rāg* (ie. the more important notes of a *rāg* have greater *vazan*)- which confirms the distinction between a qualitatively determined hierarchy as perceived in many styles, and its absence in melismatic styles such as *vilambit khyāl*. [Ginde: lec. dem. Bombay 31.xii.90]

<sup>52</sup>Cf Sachs' use of the terms qualitative and quantitative, in his additive and divisive rhythmic categories (1.2.2).



is the manifestation of explicit metric structure, controlling the temporal dimension of music. *Tāl* represents a quantitative organisation of beats, counted out with the help of hand gestures for the sake of accuracy. Implicit in the syllabic model are notionally constant tempo (*lay*), and a clearly definable relationship between *tāl* and surface rhythm (ie. *laykāri*). *Thekā* does not have a necessary role in defining or characterising *tāl* in this case.

In many ways the antithesis of the syllabic model is the melismatic model. *Tāl* remains as the agent of temporal organisation, but (as we shall see in chapters 2 & 3), its functions are considerably modified. It is a mere succession of beats- some distinguished in the *thekā* as cues (see 2.2.2)- but not a hierarchical structure, either quantitative or qualitative. Hand gestures are redundant; tempo remains constant, and slow, but the *tāl* to surface rhythm relationship is less clearly definable.

In much Hindustānī music, the rhythmic organisation is a more subtle variant of the traditional syllabic model. All its essential features are retained (except the assumption of invariable tempo), and superimposed on this model is the characterisation of *tāls* by their *thekās*. It is essentially a hybrid system,<sup>53</sup> and synthesises a quantitative and a qualitative hierarchy.

All three of these models are significant in the rhythmic analysis of North Indian music; yet the music cannot be divided into three parts, each of the three organised by a different paradigm. The most syllabic vocal genre- namely *dhrupad*- frequently uses stereotypical drum patterns, albeit not as consistently as the *thekā* is used in *khyāl*. In this case, it is possible to describe the rhythmic organisation in terms of a hybrid model- noting that the quantitative element of the *tāl* predominates over the qualitative.

The most melismatic vocal genre- namely *ati-vilambit khyāl*- has developed further since the time of Amir Khan, in whose music *tāl* could be said to be in some respects dysfunctional (see later, 3.2.2-3). While many *khyāl* singers of the current generation retain a melismatic rhythmic style and a very slow tempo, they also encourage an accompaniment style in which regular subdivision of the *mātrā* is established by an elaborated *thekā*.

This is an important change which has stabilised the status of the *tāl*; although the rhythmic organisation of this type of music is still distinct from that of the rest of North

<sup>53</sup>Recognition of this fact is essential to the understanding of a number of apparent contradictions and anomalies within the system, as we shall see in ch. 2.

Indian music, it is possible to consider it as a particular variant of the hybrid model described above. Whereas in the latter case *tāl* is a qualitatively defined hierarchy, largely characterised by the *ṭhekā*, in the melismatic model this hierarchy becomes transformed into a simple time-measuring apparatus, and *ṭhekā* becomes just a supplier of cues.

Rather than talk of three distinct models of rhythmic organisation in North Indian music then, it is preferable to talk of a single unified model, in which a number of factors are variables which can dictate significant variations between the types of organisation actually experienced. This unified theoretical model describes what is essentially a hybrid, synthesised over many centuries both through the absorption of new elements into Hindustānī music, and through the latter's autonomous development. It encompasses a metric hierarchy with both quantitative and qualitative characteristics, and an explicitly dual structure of music in which surface rhythm overlays that metric pattern.

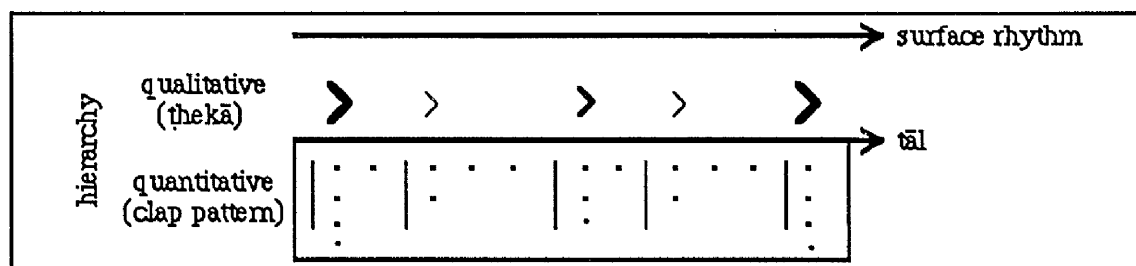


fig 1.8: An illustration of a unified model of rhythmic organisation, combining aspects of quantitative and qualitative hierarchy.

Two of the most important variables in this model are the tempo and the use of the *ṭhekā*. If the tempo is very slow, the structure loses most of its hierarchical aspect, and the *ṭhekā* retains only its function as the source of cues for time-measurement- as in the melismatic model. If the *ṭhekā* is not used extensively, the qualitative aspect is again weakened, and the clap pattern regains its historical importance as the main aid to time keeping- as in the syllabic model.

This hybrid model then accurately reflects the rhythmic organisation of much Hindustānī music- and by recognition of changes in certain rhythmic parameters, it can be adjusted to describe all *nibaddh* music. In this way it is possible to unify three distinct models of rhythmic organisation, and to characterise them as variants of a single hybrid model. This indeed is the solution suggested by conventional *tāl* theory, in which a single terminology disguises the heterogeneous nature of North Indian rhythmic organisation.

It is apparent that the conventional perception of the *tāl* system as homogeneous and applicable to all forms of North Indian music is important. The very idea of homogeneity, and of a system in consonance with historical principles, is important to Indian music culture. The premium attached to a unitary and coherent theory not only obscures the diversity of musical practice, it has played a positive role in assisting the development of a modern hybrid system.

This chapter has set out the aims and context of the thesis, and established the first of those aims. It has described a theoretical model of North Indian rhythmic organisation, based on indigenous rhythmic concepts, but also incorporating many other theoretical perspectives. The remainder of Section I will expand on this work, by means of a detailed examination of the most important rhythmic parameters in this music. The topics covered will be, in turn, *tāl* (ch. 2), *lay* (3), performance practice and surface rhythm in general (4), and *laykāri* (5).

## Chapter 2: Tāl in practice: quantitative, qualitative and cyclic functions

Chapter 1 has outlined the general approach of this thesis, its aims and research perspectives, and- most importantly- established a theoretical model of rhythmic organisation and rhythmic style which is flexible enough to apply to any Hindustānī classical music. This model will be built on in subsequent chapters, as key rhythmic concepts are examined in turn. Section I will build up a picture of the rhythmic organisation of North Indian classical music as a whole, with detailed discussion of a number of important issues. The analysis is divided into four parts, concentrating in turn on *tāl* (ch. 2), *lay* (ch. 3), performance practice and surface rhythm (ch. 4) and *laykārī* (ch. 5).

### 2.1: Tāl

The first of these areas to be considered is *tāl*. *Tāl* has already been considered from a theoretical point of view in chapter 1, viewed as the manifestation of metric structure- in effect the organisational level of Hindustānī music's explicitly dual system of organisation. In this context the basic theory and terminology of *tāl* were introduced, and it was shown how this theory implied a particular model of rhythmic organisation- a model which is not always appropriate to modern music as performed (1.3).

The next section (1.4) looked at this paradoxical situation in more detail by establishing exactly what this 'ideal' syllabic model of rhythmic organisation implies, and how historical developments in Hindustānī music have modified essential parameters of that model. Finally (1.4.5) it was shown how all these factors could be accommodated within a unified model of rhythmic organisation, which allows for the considerable diversity observed in practice.

One of the basic features of this unified model is that it recognises that *tāl* represents a hybrid system of metric organisation. *Tāl* incorporates elements of both a quantitative and a qualitative metric hierarchy, besides a preference for cyclicity which is essentially independent of either of these factors. *Tāl* is a conceptual temporal structure represented by cheironomy (clap patterns), yet it is also a rhythmic Gestalt established by the accentual patterns of the *ṭhekā*.

Chapter 2 aims to look at *tāl* in more detail, in a more phenomenological analysis.

In the first instance we must introduce the most common *tāls*, and then clarify what the principal functions of *tāl* are in Hindustānī music- quantitative, qualitative and cyclic. Then, taking each of these areas in turn, we must look at how different features of *tāls*- in particular, clap patterns and *thekāś*- contribute to these different functions.

This study should not only illustrate the existence of these different functions, but by looking at different examples it will add considerable evidence in support of hypotheses developed in chapter 1, regarding the rhythmic organisation of North Indian classical music.

### 2.1.1: Common *tāls* of North Indian music

About 20 *tāls* are commonly used in North Indian music at the present time, as well as a number of rare *tāls* used mainly in drum solos. They comprise binary, ternary, quintal and septimal<sup>1</sup> structures as well as combinations of the above (eg. *ektāl* which combines binary and ternary features- see 2.3.1) and a few irregular structures, including some apparently conceived as arithmetical progressions (eg. *matta tāl* of 9 *mātrās*, usually split 2+3+4). Many *tāls* are associated with particular genres, and most are limited in the range of tempi at which they may be performed. The system is not only sophisticated, but also quite heterogeneous in practice, since variation in certain rhythmic parameters causes changes in the mode of rhythmic organisation.

*Tāl* measures out musical time by means of recurring cycles of fixed numbers of equal *mātrās*, as illustrated in 1.3.1. These *mātrās* are grouped into a sequence of *vibhāgs*, each of which is marked by a hand gesture when counting out the *tāl*. *Tāls* are often most easily recognised, however, by their characteristic basic drum patterns, called *thekāś*. The following is an alphabetical list of the most common Hindustānī *tāls*, illustrating structural features (number of *mātrās*, *vibhāg* groupings and hence clap patterns), and *thekāś*. The list

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<sup>1</sup>The terms 'quintal' and 'septimal', meaning based on groups of 5 and 7 respectively, were suggested to me by Widdess and are, I believe, of his invention. I am not aware of any other suitable Western terms, but see the Indian terms introduced later (3.1, *jāti*).

is necessarily simplified, and includes few of the many possible variants, as will become clear.<sup>2</sup>

**āḍā cautāl** : 14 *mātrās*, 2+2+2+2+2+2+2

X	2	0	3	0	4	0	X
dhī tirakita	dhī nā	tū nā	kat tā	tirakita dhī	nā dhin	dhin nā	dhī

**addhā tāl** : see *tīntāl*

**āḍi tāl** : 16 *mātrās*, 4+4+4+4

X	2	0	3	X
dhā dhi ṭa dhā	ge dhi ṭa dhā	ka ti ṭa tā	ṭiṭa kata gadi gana	dhā

**brahma tāl** : 14 *mātrās*, 2+3+4+5

X	0	2	3	0	4	5	6	0	7	8	9	10	0	X
dhā kiṭa	taka dhuma kiṭa	taka dhet tā dhet	tā ṭiṭa kata gadi gana	dhā										

**cāñcar tāl** : see *dīpcandī tāl*

**cārtāl kī savārī** : see *savārī tāl*

**cautāl** : 12 *mātrās*, 2+2+2+2+2+2

X	0	2	0	3	4	X
dhā dhā	din tā	kiṭa dhā	din tā	ṭiṭa kata	gadi gana	dhā

**dādrā tāl** : 6 *mātrās*, 3+3

X	0	X
dhā dhin nā	tak dhina dhin	dhā

**dhamār tāl** : 14 *mātrās*, 5+2+3+4

X	2	0	3	X
ka dhi ta dhi ta	dhā -	ge ti ṭa	ti ṭa tā -	ka

**dīpcandī (cāñcar or jat) tāl** : 16 *mātrās*, 4+4+4+4 or 14 *mātrās*, 3+4+3+4

X	2	0	3	X
dhā (-) dhin -	dhā dhā dhin -	tā (-) tin -	dhā dhā dhin -	dhā

**ektāl** : 12 *mātrās*, 2+2+2+2+2+2

X	0	2	0	3	4	X
dhin dhin	dhāge tirakita	tū nā	kat tā	dhāge tirakita	dhin nā	dhin

**iqvāī tāl** : see *tīntāl*

**jat tāl** : see *dīpcandī*

**jhaptāl** : 10 *mātrās*, 2+3+2+3

X	2	0	3	X
dhin nā	dhin dhin nā	tin nā	dhin dhin nā	dhin

**jhūmrā tāl** : 14 *mātrās*, 3+4+3+4

X	2	0	3	X
dhā dhā tirakita	dhin dhin dhāge tirakita	tin tā tirakita	dhin dhin dhāge tirakita	dhā

<sup>2</sup>These *theḱās* from Ghosh 1968:68-70 (*addhā, dādrā, rūpak, tīlvāḱā tāls*) Kaufmann 1967:254-258 (*āḱā cautāl, dīpcandī*); Sanyal (pers. comm., *brahma tāl, matta tāl*); Bhatkande V:10-12 (*cautāl, tīvrā tāl*); Powers 1980:125 (*dhamār tāl*); Wegner 1982:58-61 (*iqvāī*); Gottlieb 1977:226 (*jhūmrā tāl*); Alkutkar 1960?:40 (*āḱi tāl*) and Swapn Choudhury (pers. comm., *savārī* and *pañcam savārī tāls*).

kaharvā tāl: 8 mātrās, 4+4

X	0	X
dhā ge na tin	na ke dhin na	dhāge

matta tāl : 9 mātrās, 2+3+4

X	0	2	3	0	4	5	6	0	X
dhā ghira	naka ghira naka	tiṭa kata gadi gana	dhā						

pañcam savārī tāl : 15 mātrās, 4+4+4+3

X	2	0	3	(4)
dhī nā dhīdhī kat	dhīdhī nā, dhī dhīnā tin--tra	tinnā trkt tinnā kattā	dhīdhī nā, dhī dhīnā	

pañjābī tīntāl: see tīntāl

rūpak tāl : 7 mātrās, 3+2+2

X/O	1	2	X
tin tā tirakita	dhin nā	dhin nā	tin

savārī tāl (cārtāl kī savārī) : 11 mātrās, 4+4+3

X	0	2	(3)	X
dhī trkt dhin nā	tū nā kat tā	dhīdhī nā, dhī dhīnā	dhī	

sitārkhānī tāl : see tīntāl

sūltāl (sūrphaktā) : 10 mātrās, 2+2+2+2+2

X	0	2	3	0	X
dhā dhā	din tā	kita dhā	tiṭa kata	gadi gana	dhā

tilvāḍā tāl : see tīntāl

tīntāl (tritāl) : 16 mātrās, 4+4+4+4

X	2	0	3	X
dhā dhin dhin dhā	dhā dhin dhin dhā	dhā tin tin tā	tā dhin dhin dhā	dhā

variants of tīntāl: (all 16 mātrās)

(a): addhā, pañjābī or sitārkhānī<sup>3</sup>

X	2	0	3	X
dhā -dhī -ga dhā	dhā -dhī -ga dhā	dhā -tī -ka tā	tā -dhī -ga dhā	dhā

(b): iqvāī:

X	2	0	3	X
dhā dhin -trekre dhin	dhāge dhin -trekre tin	tā tin -trekre dhin	dhā dhin -trekre dhin	dhā

(c): tilvāḍā:

X	2	0	3	X
dhā trkt dhin dhin	dhā dhā tin tin	tā trkt dhin dhin	dhā dhā dhin dhin	dhā

tivrā tāl : 7 mātrās, 3+2+2

X	2	3	X
dhā din tā	tiṭa kata	gadi gana	dhā

fig 2.1: Common Hindustānī tāls, showing vibhāg divisions, clap patterns and thekās.

<sup>3</sup>These names are used inconsistently to cover a range of tīntāl variants; for more detail see Manuel [1983b:305]

Lists similar to that above will be found in most introductory texts on Hindustānī music, illustrating how each *tāl* may be described in terms of its *mātrā* count, *vibhāg* divisions, clap patterns and *ṭhekā*.

As was pointed out in chapter 1, *tāl* is essentially a hybrid system, incorporating both quantitative features (illustrated by the clap patterns), and qualitative (by *ṭhekās*). The essence of a *tāl* is therefore most often thought of as the combination of clap pattern and *ṭhekā*: *tāls* are “quoted” and transmitted by recitation of the *ṭhekā* to the accompaniment of the appropriate hand gestures.<sup>4</sup> Since each *tāl* has both these essential features, *tāl* often appears to be a unified and homogeneous system, whereas in truth it is quite diverse. Thus in some *tāls*, the *ṭhekā* is merely a standardised elaborative pattern, illustrating the essential internal divisions as marked by the clap pattern; in others the position is reversed, with the clap patterns emphasising the structure inherent in the *ṭhekā*.

The application of a single terminology gives rise to some confusing anomalies. Some of these will be discussed below; they are indicative of the fact that the synthesis of the earlier syllabic system with the later *ṭhekā* based system is not complete. There are anomalies arising from other causes too, most of which are not altogether mysterious; and these appear more logical when seen in the context of the performance practice of the genre to which each *tāl* is applied.

No *tāl* is used in all genres, and the rhythmic and aesthetic requirements of each genre are different. There may be features of the system which can only be explained as historical accidents, (for instance, features that have been retained despite apparently losing their functional significance), yet most will be found to have some function in performance. One of the aims of this thesis is to demonstrate the relationship between rhythmic style, mode of rhythmic organisation, and aesthetic priorities in performance.

### 2.1.2: Functions of *tāl*

It has been suggested above that the *tāl* system has many varied manifestations in Hindustānī music- and is employed in music of quite varied rhythmic styles, and diverse

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<sup>4</sup>In fact, each *ṭhekā* has many variations in practice, and many *tāls* have more than one possible counting pattern. Within each *gharānā* or *bāj* however, both are more or less standardised at any given tempo, although *ṭhekās* still vary considerably with tempo.



modes of rhythmic organisation. Yet, if we look at *tāl* from the perspective of its specific functions in music, and then consider how those functions may be more or less relevant in each of North Indian music's many classical forms, the variety makes more sense. The functions of *tāl* fall into three main categories, as follows, and the discussion below will be divided accordingly.

- Functions of a quantitative hierarchy; time measurement and time division, as expressed through the structures of both clap patterns and *ṭhekās*.<sup>5</sup>
- Functions of a qualitative hierarchy; rhythmic character and dynamic form, as determined by the *ṭhekā*'s accentual pattern in particular.
- Cyclicity.

The relative importance of each of these three functions, which may be coexistent and complimentary, varies with the musical context: therefore it will be necessary to analyse *tāl* functions with respect to context (genre, form and stage of performance).

It is self explanatory that the way time is organised in music, the whole complex of tempo, accentual patterns, regularity or irregularity of rhythm and so on, is specific to the form of that music. In fact we may perhaps go as far as to identify this rhythmic complex as fundamental to the musical form, as Cone has suggested with respect to Western music; ".....musical form, as I conceive it, is basically rhythmic. It is not, as conventional analysis would have it, thematic, nor.....harmonic. Both of these aspects are important, but rhythm is basic." [1968:25].<sup>6</sup> (Western 'conventional analysis' is perhaps now less at odds with Cone; Lerdahl and Jackendoff's work [1983] treats the understanding of metric structure as of primary importance.)

In general terms, *tāl* determines temporal structure, and is the basis of form. The *tāl* cycle is the limit of meaningful metric structure, and the concept of larger architectonic levels is virtually meaningless in North Indian music.<sup>7</sup> Thus while *tāl* may in a sense unify a performance, its function is predominantly localised; the soloist will not generally plan his

<sup>5</sup>The importance of accurate time measurement- and consequently the use of cheironomy- is discussed in 1.2.1.

<sup>6</sup>Cone was responding to traditional types of Western musicology which are not necessarily relevant to India, yet his identification of rhythm as basic to form holds true for both musical cultures. A *drut gat* is a *drut gat* because of the ways in which the music is organised in time, whether played on *sitār* or *sarod*, in *rāg mārāvā* or *rāg bhairavī*.

<sup>7</sup>See however 3.2.2 on cycle length.

improvisations more than two or three cycles ahead. One consequence of this is that while insights are certainly to be gained in retrospect (for example from a transcription of an entire performance), our emphasis must be on the musical process rather than its product.<sup>8</sup> “We can see notation synoptically, but remember we hear music successively” Lester reminds us [1986:3]; thus one must try to understand the function of *tāl* in terms of the ways in which it is determining the processes of musical creation (and appreciation) at any moment in time.

*Tāl* divides time into cycles; or perhaps more accurately it determines that musical time will be created as a recurring cycle. *Tāl* also divides these cycles into smaller units, usually between 1/2-2 secs long (either the *mātrā*, or a subdivision or multiple thereof- see ch. 3).<sup>9</sup> These small time units are organised in to sections (*vibhāgs*), and the sections in turn into cycles (*āvarts*); thus a three-tier quantitative hierarchy is established.

If a pattern of dynamic accents is added to this measuring out of time, this substantially enhances rhythmic character; and more character may be added with the timbre and pitch variations of a repeated *thekā*. (This superimposition of *thekā* on a quantitative structural model is discussed in 1.4.4).

*Tāl* cycles may be repeated indefinitely. If audible clues indicate that time is not only measured from the beginning of the cycle, but also ticked off towards the next beginning, this indicates cyclicity (see 2.4). Furthermore if the rhythmic system is cyclic, musicians can improvise with a clear expectation of what is to come, which facilitates a system of improvisation where tensions are created in order to be resolved on the first beat of the next cycle.

At any given point in a musical performance, any or all of these factors may be in operation. Once the *tāl* has been going long enough to be firmly established in the performers' minds (not long, given that the structures will be familiar to them), they will be aware of the tempo, the length of the cycle and the point reached in it. In many cases they will be able to predict from experience what their accompanist will play and when, and will be confident of sufficient cues being provided to safely guide them to *sam*.

<sup>8</sup>See 1.2.1.

<sup>9</sup>Conversely, it adds short time units to make a longer cycle. The difference between a quantitative/additive concept of rhythm and a qualitative/divisive one, as proposed by Sachs, is discussed in 1.2.2/1.4.2.

Furthermore the *ṭhekā* may have established a sufficiently strong accentual pattern to guide the soloist, even perhaps to the point of dominating his performance (ie. determining the surface rhythm). Thus *tāl* may give freedom or restraint in varying measures (it may free the soloist from the burden of maintaining the temporal organisation, or may dominate through the rhythm of the *ṭhekā*), but it always provides structure.

*Tāl* is a comprehensive system of metric and rhythmic organisation, and this applies however much rhythmic style and mode of organisation may vary: even in music of melismatic style where most 'traditional' rhythmic values are weak or negated, *tāl* is present to provide whatever temporal organisation is necessary. In syllabic music the factors of time measurement and cyclicity are primary, and in music of melismatic style, simply time measurement: in much Hindustānī music however, all three categories of function- quantitative, qualitative and cyclic- will be present. These issues will be covered in greater detail in sections 2.2-2.4.

## 2.2: Quantitative functions: time measurement and division

The primary function of *tāl* is to divide and measure out time; but how does it achieve this? In principle the *tāl* continues its repetitive progress throughout any metrically bound (*nibaddh*) form of music: sometimes this is made clear by performers and/or audience visibly keeping time by means of hand gestures, at other times by the statement or repetition of the *ṭhekā* by the accompanist, or by both means or neither (although where the *tāl* is not being made accessible through clap patterns or *ṭhekā*, it has generally already been established by these means). Thus *tāl* is both an abstract and a concrete phenomenon, which may function on several different levels.

The issue of time measurement is twofold since one must consider both the measurement of the longest metrically significant time-span (the *āvart*), and the maintenance of structure within that span. The unambiguous structuring of this time-span is clearly necessary for its accurate preservation, thus one must look first at how the *āvart* is structured and at the methods used to establish and reinforce that structure. The following sections deal with the working of these phenomena.

### 2.2.1: Clap patterns (cheironomy)

Counting or clapping patterns have been a feature of the Indian *tāl* system since ancient times.<sup>10</sup> The Nāṭyaśāstra (pre-C5) gives patterns for each *tāl* using up to 8 different gestures, 4 sounded and 4 unsounded<sup>11</sup>; these have since been reduced to two, one sounded and the other silent. These actions are simply a clap and a wave of the hand; they are called *tālī* and *khālī* respectively, and represented in modern North Indian notation by the signs X and 0. The primary function of clap patterns and their significance, now as in the past, is that they facilitate the counting out of the *tāl* cycles, helping to ensure that the *tāl* structure remains intact and that beats are not inadvertently lost or added.<sup>12</sup>

In modern Hindustānī music, clap patterns are particularly useful (even indispensable), in measuring time when audible clues are at a minimum; when *ṭhekās* are not used consistently, for example, or do not in themselves provide sufficient guidance. Indeed since the development of *ṭhekās* is a much more recent phenomenon than that of clap patterns, it is fair to say that it is clap patterns that have traditionally been the principal aid to Indian time-keeping<sup>13</sup>: this is indeed still the case in *dhrupad-dhamār*, as it is in South Indian music.

All *tāls* have clap patterns; in most cases they are standardised, although some *tāls* do have a number of variant patterns (see eg. *dhamār tāl*, 2.2.3). The primary requirement of a clap pattern is that the identity of *sam* should be clearly and unambiguously established, and therefore the pattern should not repeat within the cycle. To this end, the patterns require divisions of different lengths (thus forming an asymmetrical pattern), and/or the use of two or more hand gestures. For this reason, simply three claps are sufficient to establish the asymmetrical *tivrā tāl* (3+2+2), whereas a second gesture is required for *tintāl*, since a pattern of simply four equidistant claps would be almost entirely redundant.<sup>14</sup>

<sup>10</sup>Cf. Gerson-Kiwi, who writes “In the Indian tradition, cheironomic practice is related in the first instance to the teaching of Vedic chant...” [1980:192].

<sup>11</sup>See eg. Rowell [1988:147].

<sup>12</sup>See 1.2.1 for the religious importance of time-keeping.

<sup>13</sup>“The function of cheironomy was to measure out, in visible, audible and unambiguous fashion, the musical time....”; Widdess [1981c:507] on Nānyadeva’s Pāṇikā songs (c. 1100AD).

<sup>14</sup>See Widdess [1981b:133]

Clap patterns often also support the accentual pattern of the *ṭhekā* (or vice versa, the effect is mutual); so that the claps or waves will come on the accented beats, and/or the *khālī* gesture may signify the *ṭhekā*'s “*khālī*” section (a section using *bol*s without bass resonance). Clap patterns may thus support the *ṭhekā*, or they may on occasions contradict its implicit structure (see sect. 2.2.3). They may do no more than keep time, or they may in fact influence the music profoundly, for instance by suggesting rhythmic patterns for compositions,<sup>15</sup> or providing a structure for improvisation by allowing the soloist to deal with each *vibhāg* in turn. At the other extreme, in melismatic *ati-vilambit khyāls*, although the *vibhāg* division is retained in principle, the clap patterns are redundant; they simply fail to fulfil their function at a tempo slower than about 30MM.

### 2.2.2: *Ṭhekā* and time measurement

The *ṭhekā*, the basic drum pattern, may assist time measurement by means of the aural clues it provides. Indeed the *ṭhekā* itself is an audible indication of the *tāl*, but in practice certain features are particularly useful in this regard, especially *khālī* sections and certain other *bol* combinations (eg. the phrase “*tirakita*”) which may act as signals.

*Khālī* sections provide the basic aural clues in the *ṭhekās* of a number of *tāls*, for instance *tīntāl*: in this case the *ṭhekā* breaks down into 4 equal sections, and the only distinguishing factor is the absence of undamped *bāyā* strokes (“*ge/ghe*”) in the 3rd quarter (in practice, *mātrās* 10-13 rather than 9-12<sup>16</sup>). This sequence, “*tin tin tā, tā*” is the most significant audible clue to the point reached in the *tāl*.

In *baṛā khyāl tāls* too<sup>17</sup>, *khālī* sections can be useful cues, for example *mātrās* 5-8 of *ektāl* and 8-10 of *jhūmrā tāl*. However, because the tempo is generally very slow, additional cues are needed, most significantly the easily distinguishable *bol* “*tirakita*” which occurs on *mātrās* 4 and 10 of *ektāl* and on *mātrās* 3, 7, 10 and 14 of *jhūmrā tāl*. In the latter case the fact that this cue is repeated four times may cause additional confusion,<sup>18</sup> but in combination with the *khālī vibhāg* it supplies sufficient guidance.

<sup>15</sup>See ch. 7.

<sup>16</sup>See 2.2.3, 2.4.1.

<sup>17</sup>*Baṛā khyāl* is a term used to describe *khyāl* in slow tempo, in which the *nibaddh* phase includes an extensive *rāg* development (*ālāp, vistār*). Cf. *vilambit/ati-vilambit khyāl*.

<sup>18</sup>This observation was suggested to me by the singer Veena Sahasrabuddhe (interview, iii/91).

ektāl : 12 mātrās, 2+2+2+2+2

X	0	2	0	3	4	X
dhin dhin	dhāge <u>tirakita</u>	tū nā	kat tā	dhāge <u>tirakita</u>	dhin nā <sup>19</sup>	dhin

jhūmrā tāl: 14 mātrās, 3+4+3+4

X	2	0	3	X
dhā dhā <u>tirakita</u>	dhin dhin dhāge <u>tirakita</u>	tīn tā <u>tirakita</u>	dhin dhin dhāge <u>tirakita</u>	dhā

fig 2.2: Cueing features of *vilambit ektāl* and *jhūmrā tāl*. *Khālī bols* are italicised, except for the special case of the *bol* “*tirakita*”, which is underlined.

A different situation pertains in *dhrupad*, where the *ṭhekā* is not used so extensively as in *khyāl*; clap patterns play a much more important role in time keeping. However, even there aural clues play their part: the recognisable stroke “din” on *mātrās* 3 and 7 of *cautāl*, and the cadential phrase “*tirakita gadigana*” covering the last four *mātrās* of *cautāl* and several other *dhrupad tāls* are cases in point. Both these features may be maintained in some form even in the absence of the *ṭhekā* as such; for instance the phrase “*tirakita gadigana*” may be heard at double speed at the end of a cycle, using 2 *mātrās* rather than 4. In this case the cadential function of the phrase is not dependent on its *lay* (ie. rhythmic density- see ch. 3).

cautāl : 12 mātrās, 2+2+2+2+2

X	0	2	0	3	4	X
dhā dhā	<u>din</u> tā	kiṭa dhā	<u>din</u> tā	ṭiṭa kata	<u>tirakita gadigana</u>	dhā

fig 2.3: *Cautāl ṭhekā*, with final 4-*mātrā* pattern varied: the most prominent cueing features are underlined.

### Ṭhekā: use and variation

While commenting on the importance of the *ṭhekā*, it must be mentioned that the use of the *ṭhekā* varies greatly, particularly between genres, and also that basic *ṭhekā* patterns as quoted above are almost invariably elaborated in practice. There is a distinction between different types of elaboration in the two archetypal *tāl* types described in 1.4.4.<sup>20</sup>

Elaboration in symmetrical *tablā tāls* tends to comprise a filling-in between the structurally important *bols* which make up the basic *ṭhekā* (the amount of elaboration being largely dependent on the tempo). Elaboration of *ṭhekās* in asymmetrical *pakhāvaj tāls* tends to be more divisive, allowing more displacement of the *ṭhekā bols*.

This distinction is illustrated below, with examples of elaborated *ṭhekās* of *cautāl* (*pakhāvaj*) and *rūpak tāl* (*tablā*). In the *cautāl* example the phrase “*ṭiṭakatagadigana*” is

<sup>19</sup>This “nā” *bol* becomes “dhā” in most elaborated patterns.

<sup>20</sup>Stewart’s work [1974] contains a more detailed account of *ṭhekā* elaboration than can be accommodated here.

doubled in speed (and consequently *bols* are displaced). In the *rūpak tāl* example, the *ṭhekā* is elaborated by substitution and interpolation of *bols*.<sup>21</sup>

**cautāl** : 12 *mātrās*, 2+2+2+2+2+2

X	0	2	0	3	4		X
dhā dhā	din tā	kiṭa dhā	din tā	tiṭa kata	gadi	gana	dhā

X	0	2	0	3	4		X
dhā dhā	din tā	kiṭa dhā	din tā	tiṭa kata	tiṭakata gadigana		dhā

**rūpak tāl** : 7 *mātrās*, 3+2+2

X/O	1		2	X
tin tā tirakita	dhin nā		dhin nā	tin

X/O	1	2	X
tī--ka tintin tā-tk	dhindhin dhāge	dhin dhāge	tin

fig 2.4: Illustrations of plain and elaborated *ṭhekās* of *cautāl* and *rūpak tāl*.

### 2.2.3: The relationship between clap pattern and *ṭhekā*

Clap patterns frequently reflect changes in the type of *bols* used in the *ṭhekā*: for instance the *khālī* gesture can signify the *khālī vibhāg*- as was noted above. The *khālī vibhāg* (that marked by a wave, and the symbol “0”) may thus correlate with a section of the *ṭhekā* using *khālī* or *band bols*, those lacking the resonant bass sound of the *bāyā*<sup>22</sup> (eg “nā, tā, tin, ke, tirakita”). The bass tones occur in the *bharī* or *khulī*<sup>23</sup> *bols* (“ge, dhā, dhin” etc) which theoretically fall in the remaining, *tālī vibhāgs*. Yet in practice, the relationship between counting pattern and *ṭhekā* can vary between coincidence (*jhaptāl*), overlapping (*tīntāl*) and contradiction (*ektāl*).

The correlation between *khālī vibhāg* and *bols* is exact in *jhaptāl*;

**jhaptāl** : 10 *mātrās*, 2+3+2+3

X	2	O	3	X
dhin nā	dhin dhin nā	tin nā	dhin dhin nā	dhin

fig 2.5: *Jhaptāl*, *ṭhekā* with *khālī vibhāg* italicised.

*Jhaptāl* is one of several symmetrical *tāls* made unambiguous by the *tālī/khālī* distinction.<sup>24</sup> In such *tāls*, the *khālī vibhāg* is an exact counterpart of the first *tālī vibhāg*:

<sup>21</sup>The elaborated *rūpak tāl* example is from Stewart [1974:106].

<sup>22</sup>The *bāyā* (lit. left) is one of the pair of drums making up the drum-set ‘*tablā*’

<sup>23</sup>In general *khālī/band* (empty/closed) *bols* are represented by unvoiced consonants, and *bharī/khulī* (full/open) *bols* by voiced consonants.

<sup>24</sup>The importance of symmetrical *tāls* and of the *ṭhekā* in the *tablā*’s rhythmic system were discussed in 1.4.4.

the *bols* of the *khālī vibhāg* are those of the first *vibhāg* without their *bāyā* (left hand, ie. bass) element, so that “dhin” becomes “tin”, “dhā” becomes “tā” and so on. The correlation of *khālī vibhāg* with *khālī bols* is also clear in *rūpak tāl*, which is unique in having a *khālī* section coinciding with *sam*:

**rūpak tāl** : 7 *mātrās*, 3+2+2

X/O	1	2	X
<i>tin tā tirakita</i>	dhin nā	dhin nā	tin

fig 2.6: *Rūpak tāl*, *ṭhekā* with *khālī vibhāg* italicised.

*Tintāl* and *dhamār tāl* provide examples of looser forms of correlation. In *tintāl*, the correlation is not so exact as in *jhaptāl* or *rūpak tāl*- the *khālī* bols are shifted back by one *mātrā*;

**tintāl** : 16 *mātrās*, 4+4+4+4

X	2	0	3	X
dhā dhin dhin dhā	dhā dhin dhin dhā	dhā <i>tin tin tā</i>	<i>tā</i> dhin dhin dhā	dhā

fig 2.7: *Tintāl*, *ṭhekā* with *khālī bols* italicised.

In *dhamār tāl*, the *khālī bols* cover half the cycle and overlap by one *mātrā*, with the result that *sam*, marked by a *tālī* gesture, is actually played on a *khālī bol*;

**dhamār tāl**: 14 *mātrās*, 5+2+3+4

X	2	0	3	X
<i>ka dhi ta dhi ta</i>	dhā -	ge <i>tī ṭa</i>	<i>tī ṭa tā</i> -	<i>ka</i>
<div style="display: flex; justify-content: space-around; width: 100%;"> <span>A</span> <span>B</span> </div>				

fig 2.8: *Dhamār tāl*, *ṭhekā* with *khālī bols* italicised.

Here B appears to be a *khālī* counterpart to A<sup>25</sup>: the connection between *ṭhekā* and counting pattern is somewhat tenuous, but at least the *sam/khālī* dichotomy of the clap pattern is represented in the *ṭhekā*. *Dhamār tāl* may be counted by means of at least three other clap patterns however. One, popular in the temple tradition known as *havelī saṅgīt*, is 3+2+2+3+2+2, alternating *tālīs* and *khālīs* (ie X+0+2+0+3+0).<sup>26</sup> Another variant ignores *khālī* completely to give 5+5+4<sup>27</sup>, yet another is 2+3+2+3+4 (X+0+2+0+3)<sup>28</sup>; neither of these shows a more logical correlation with the *ṭhekā*.

<sup>25</sup>This observation was suggested to me by Widdess.

<sup>26</sup>From Sanyal, pers. comm. xi.87.

<sup>27</sup>From Ravi Shankar, pers. comm.

<sup>28</sup>See Bhowmick [1975:40].



*Ektāl* is an extremely anomalous example, showing no apparent correlation between the structures of its counting pattern and its *ṭhekā*, in which the *khālī bols* cover the middle third of the cycle (*mātrās* 5-8);

**ektāl** : 12 *mātrās*, 2+2+2+2+2+2  

X	0	2	0	3	4	X
dhin dhin	dhāge tirakita	tū nā	kat tā	dhāge tirakita	dhin nā	dhin

fig 2.9: *Ektāl*, *ṭhekā* with *khālī bols* italicised.

Its alternative clap pattern, sometimes used in *drut lay*, 3+3+3+3 (X+2+0+3)<sup>29</sup>, shows no better correlation to the *ṭhekā*'s structure (although the *ṭhekā* may be performed with dynamic accents suggesting a ternary structure- see 2.3.1 below). The standard *ektāl* clapping pattern is identical to that of *cautāl*, where the two *khālī vibhāgs* do correlate with *khālī bols* of the *pakhāvaj*. Although the historical development of these and other *tāls* has yet to be properly established, it seems that *ektāl* has borrowed the counting pattern of *cautāl*, to which its *ṭhekā* is apparently thoroughly unrelated.<sup>30</sup> Anomalous as this undoubtedly is, it illustrates the fact that both *ṭhekā* and clap pattern may function simultaneously, without necessarily showing any structural correlation with each other.

All these examples illustrate the point that the purpose of the clap pattern is to support one of the *tāl*'s principal functions, namely time measurement. The distinctions in drum timbre in the *ṭhekā* also play a part in time measurement, in fact their function in that respect can be very similar, yet there is no overriding reason why the two patterns should coincide (unless of course one is derived from the other historically), and this is reflected in practice. The correlation of the silent hand gesture *khālī* with the *khālī* drum strokes applies only to certain *tāls*: it is a relatively recent development, and has occurred probably both through *ṭhekās* being created to support existing counting patterns, and vice versa.

The apparent confusion in Hindustānī music theory over the role of clap patterns and *ṭhekās*, and their relationship, needs clarification. These two phenomena are in essence features of two distinctly different rhythmic systems. In one system a quantitative structure is expressed through the clap pattern; in the other, qualitative structure is determined by the *ṭhekā*. Since, as was argued in 1.4.2-3, a process of reconciliation and hybridisation

<sup>29</sup>See Stewart [1974:117], and Renshaw [1966:82] who quotes the great *sarod* player Ali Akbar Khan giving three versions of *ektāl*, 2+2+2+2+2+2; 3+3+3+3; and 6+6.

<sup>30</sup>Stewart in fact suggests that affinity with *dādrā* is closer than that with *cautāl* [1974:111, 117-8]. Powers comments on this same anomaly [1980:122].

between these two systems has been going on for some time (perhaps 150-200 years), it is rarely possible to classify *tāls* unequivocally as belonging to one group or the other. An understanding of the conceptual difference is however necessary in order to explain much music practice.

The clap pattern is a primary characteristic of the first group (represented nowadays most strongly in *dhrupad* and other genres accompanied by the *pakhāvāj*, in *tāls* such as *cautāl*), and the *ṭhekā* is representative of the second (the group which includes *tāls* which have been introduced through the *tablā*, eg. *kaharvā tāl*). In the hybridisation process, *tāls* of the first group have acquired *ṭhekās*, and symmetrical, *ṭhekā* based *tāls* have been given clap patterns; others have been created by a combination of older *tāls*, or been imported into classical music from folk music, there to acquire both of these ‘classical’ features. The merging of the two systems is not however complete, and the anomalies or mis-matches between *ṭhekā* and clap pattern are the by-products of this historical process.

### 2.3: Qualitative functions: rhythmic character and accentual patterns

Chapter 1 established that *tāl*, although historically a quantitative metric hierarchy, in modern music is often defined as much if not more by qualitative factors- accentual patterns, pitch and timbre variation. Each *tāl* is more than a collection of *mātrās*, and more than a recurring cycle of fixed length: by a variety of means each *tāl*, at each tempo, acquires its own aesthetic character. In many cases, this character is in fact determined largely by the quantitative metric pattern and tempo. In others, it is created by factors such as accentual patterns inherent in the *ṭhekā*. The discussion which follows addresses issues of the individuality and character of *tāls*.

#### 2.3.1: Observations on the character of *tāls*

Every Indian musician I have spoken to has reaffirmed that each *tāl* has its own character; this is not in dispute, in fact it is little more than a truism. The questions to be asked are about what is meant by ‘character’, and which factors contribute to it. If it were possible to leave aside the performers’ own individual styles, the conventional associations of genre

and so on, what would be left of the character of the *tāl* per se? Is there similarity between *tāls* with the same number of *mātrās*, or between all ternary, all quintal structures and so on? Do similar connections exist between *tāls* with related *ṭhekās*, regardless of the number of *mātrās*? How important is performance tempo? We will see that all these factors must be considered.

In the slow *ektāl* and *jhūmrā tāl* used in *baṛā khyāl*, there is little more to the respective *tāls*' character than the effect of the very slow tempo: depth, repose, ease, lack of a convincing rhythmic structure. Folk-derived *tāls* such as *kaharvā* and *dādrā* have a lively, driving quality due to the powerful accents and the *bāyā* pitch modulation of their *ṭhekās*.<sup>31</sup> *Dhrupad tāls* such as *cautāl* have qualities which may be dependent to some extent on their *ṭhekā*; such as *cautāl*'s measured alternation of *tālī-khālī-tālī-khālī* groups, followed by the cadential "tirakita gadigana" driving towards *sam*. However, as the *ṭhekā* is not used as extensively as in *khyāl*, much of the rhythmic character is created by the wide variation allowed from the basic drum pattern, together with the energy and rhythmic invention of the performance. To this extent, *cautāl* does share a lot with related *pakhāvaj tāls* such as *tivrā tāl* or *jhaptāl* in its *pakhāvaj* form, as illustrated here;

**cautāl** : 12 *mātrās*, 2+2+2+2+2

X	0	2	0	3	4	X
dhā dhā	din tā	kiṭa dhā	din tā	tiṭa kata	gadi gana	dhā

**tivrā tāl** : 7 *mātrās*, 3+2+2

X	2	3	X
dhā din tā	tiṭa kata	gadi gana	dhā

**jhaptāl** : 10 *mātrās*, 2+3+2+3

X	2	0	3	X
dhā din	tā tiṭa din	tā teṭa	kata gadi gana	dhā

fig 2.10: A comparison between three *pakhāvaj ṭhekās*, showing common features such as the use of the *bol* "tiṭakata gadigana" as a cadential phrase.<sup>32</sup>

### Seven-mātrā tāls

In *tāls* performed at medium tempo, the number of beats becomes more important, and this is illustrated in the case of seven-mātrā *tāls*. *Rūpak* and *tivrā tāls* share a special quality, dependent on their both having the same 3+2+2 structure. My, admittedly subjective

<sup>31</sup>Manuel writes; "Kaharvā tāl appears in a number of variants....most of these iambically accent sam by preceding it with a stressed upbeat on the penultimate mātrā....This 'iambic' heartbeat rhythm pervades North Indian folk music; drummers often intensify the iambic effect by depressing the left hand drum head on the sam in order to....raise the pitch of that beat" [1983b:304].

<sup>32</sup>This *jhaptāl ṭhekā* comes from Bhagvāndās & Pāgaldās [1960:49].

impression is that one effect of this structure is that the group of three *mātrās*, being longer than the rest, produces a sensation somewhere between deceleration and relaxation at the beginning of the cycle (which is increased in *rūpak tāl* by the use of a *khālī bol* on *sam*).

The two groups of 2 *mātrās*, being shorter, conversely suggest tension and acceleration, so that the combined effect is one of a continual alternation of speeding up and slowing down, tension and relaxation. It is worth noting that the Turks call rhythms which combine even with odd groups *aksak* ('limping')<sup>33</sup>, which may owe something to this factor. (One might expect to find a similar quality of "seven-ness" in the 14 beat *tāls*; but as we have seen, *jhūmrā*'s tempo is too slow for this to be noticeable, while in *dhamār* the structure is ambiguous, and the greater possibilities of division and recombination of 14 beats are exploited.<sup>34</sup>)

### Ten-mātrā tāls

The principal qualities of *jhaptāl* are its medium tempo<sup>35</sup>, and a 10 beat structure with a symmetrical *tālī/khālī* division into 2+3+(2)+3. There is more to it than this: it is sometimes said to have a unique quality, derived from all of these factors. Ranade talks of coming to *sam* "in a pouncing manner" in *jhaptāl*, and quotes an unnamed "old-timer" ;

"jhaptaal jhapse aataa hai, aur jhumra jhoomke" [*jhaptāl* comes swooping, and *jhūmrā* swaying][1984:145].<sup>36</sup>

*Jhaptāl* certainly has a unique flavour, but the comparison with another 10 *mātrā tāl*, *sūltāl*, is interesting. *Sūltāl* has two principal differences from *jhaptāl*; a different structural division and a faster tempo.<sup>37</sup> It appears on this basis to be radically different, yet in fact the two factors combine to produce an affinity between the two *tāls*; effectively between *sūltāl*'s cycle and half of *jhaptāl*'s cycle. Thus the division of the group of 5 into the iambic 2+3 pattern<sup>38</sup>, provides a connecting factor between these two *tāls*.

<sup>33</sup>See eg. Reinhard [1980].

<sup>34</sup>Although an interesting similarity with *rūpak tāl* is the use of a *khālī bol* on *sam*.

<sup>35</sup>Generally- although some *khyāl* singers use *jhaptāl* for *vilambit khyāls*.

<sup>36</sup>"*jhapse*" is either a mis-spelling or a variant of "*jhapatse*" (swooping or pouncing, from the verb "*jhapatnā*") for the purpose of alliteration. [Chaturvedi and Tiwari 1986:254]

<sup>37</sup>My tempo measurements give a range of 224-411MM for *sūltāl*, contrasting with *jhaptāl*'s 38-104MM (vocal) or 80-160MM (instrumental). See chapter 3 for further details.

<sup>38</sup>Cf. Powers' term 'superparticular proportion' [1980:121].

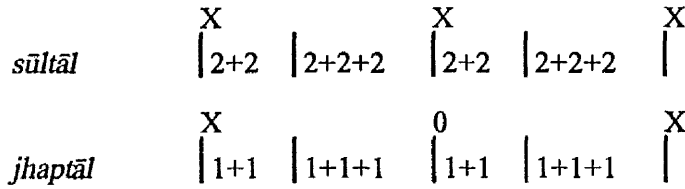


fig 2.11: An illustration of the affinity between the structures of *sūltāl* and *jhaptāl*.

### Twelve-mātrā tāls

As for the mathematics of the number twelve, it allows binary or ternary subdivisions, or both consecutively or even simultaneously. *Cautāl* makes use of this by employing a rigidly binary *tāl* structure, in both clap pattern and *ṭhekā*, but allowing frequent use of a 3+3+3+3 division in the melodic rhythm (see 4.3.3). *Ektāl* uses the same counting pattern as *cautāl*, but has an intriguing *ṭhekā*. Its structure may be regarded as either 4+(4)+4, as in the version used in *vilambit khyāl*, with the middle third (“tū nā kat tā”) effectively a *khālī vibhāg*; as 6+6 (with the symmetry of the “dhāge tirakita” phrases suggesting this interpretation); or as 3+3+3+3, suggested by the clearly audible “nā” stroke<sup>39</sup> on every 3rd *mātrā* (3, 6, 9 and 12). Alternatively, the 4+4+2+2 counting pattern may be manifested as a series of dynamic accents, effectively imposing this structure on the *ṭhekā*.<sup>40</sup> This rhythmic ambiguity is itself one of the key aspects of the character of fast *ektāl*.

<b>ektāl : 12 mātrās, 2+2+2+2+2+2</b>	$\begin{array}{c} \text{X} \\   \\ \text{dhin dhin} \end{array}$	$\begin{array}{c} 0 \\   \\ \text{dhāge tirakita} \end{array}$	$\begin{array}{c} 2 \\   \\ \text{tū nā} \end{array}$	$\begin{array}{c} 0 \\   \\ \text{kat tā} \end{array}$	$\begin{array}{c} 3 \\   \\ \text{dhāge tirakita} \end{array}$	$\begin{array}{c} 4 \\   \\ \text{dhin nā} \end{array}$	$\begin{array}{c} \text{X} \\   \\ \text{dhin} \end{array}$
444	<i>bharī</i>		<i>khālī</i>		<i>bharī</i>		
4422	<i>dhin</i>		<i>tū</i>		<i>dhā</i>	<i>dhin</i>	
66		dhāge tirakita			dhāge tirakita		
3333		(dhā)	nā		(dhā)	nā	

fig 2.12: *Ektāl*, illustrating four possible interpretations of its structure.

### 2.3.2: Ṭhekā: accentual patterns

Looking specifically at the *ṭhekā*, a number of factors contribute to the *tāl*’s character or qualitative definition. *Ṭhekās* may be conceived analytically in terms of accentual patterns, and a number of different kinds of accents may be recognised. Accent has been defined by

<sup>39</sup>This “nā” may appear as its synonym “tā” or as “dhā” in combination with the bayā stroke “ghe”.

<sup>40</sup>Deepak Choudhury sees this as the essence of the *tāl*’s structure (pers. comm.).

Cooper and Meyer [1960:8] as something which “marks for consciousness”; according to this definition, North Indian *ṭhekās* have four main types of audible accent, as follows;

- dynamic accent; variation in loudness or attack between *bols*,
- agogic accent; variation in length of the *vibhāg*,
- timbre accent; variation in *bol* timbre, for example the distinction between *bharī*

and *khālī* *bols* ,

- pitch accent; eg *bāyā* pitch modulation in *tāls* such as *kaharvā*.

As far as the qualitative definition of *tāls* is concerned, one should consider the ways these different types of accents are used in the *ṭhekās*.

Different drum *bols* vary in dynamic level regardless of any special intent on the part of the musician; this is a phenomenon inseparable in this context from timbre accents. There are also instances where the drummer deliberately places dynamic accents in order to draw attention to a particular beat. This may be a regular accent (an integral part of the *ṭhekā*), or an accent specific to the context.

Special dynamic accents of this kind may do one of several things, such as: provide a dramatic conclusion to a piece of improvisation by emphasising *sam*; help keep the soloist in *tāl* by discreetly emphasising *sam* or a cueing phrase (eg “tirakita”); or attempt to confuse the soloist by accenting a beat which is not normally accented, a legitimate tactic in several performance styles.

The term agogic accent could apply to the varying lengths of *vibhāgs* (ie the first section of *rūpak*’s 3+2+2 could be considered agogically accented<sup>41</sup>); in which case the additive structure itself contributes to rhythmic character.

The most obvious factor in the *ṭhekā* to distinguish one beat from another is the use of different drum *bols*, which have different timbres. The grossest aspect of timbre changes are those between *bharī* (‘full’) and *khālī* (‘empty’) *bols*. In many cases the *khālī* stroke

<sup>41</sup>Another interesting question here is the possibility that *mātrās* may be accented by being slightly lengthened or shortened; that is, that attention is drawn to certain beats by varying the timing of strokes slightly from that which would have been predicted from the listeners’ internalised model of the metric structure. Cf. *chand*, 1.4.4 & 5.2.1, and see Sloboda [1985:30]. This is difficult to establish empirically, since deviations in timing may easily be confused with tempo fluctuations (+/- 3% or more per cycle is commonplace- see chapter 3). Moreover, in subjective terms the perception of timing variations is confused by a perceptual equivalence between dynamic and agogic accent: Fraisse writes “There is between the lengthening of the duration and the accent, a certain functional and perceptual equivalence. If the more intense sounds are perceived as being longer, the longer sounds are perceived as being more intense” [1982:60]. Therefore I fear that this issue must be left to a more specific study at some later date.

may be heard as a timbre accent; for example the “din” in *cautāl*’s *ṭhekā* (mātrās 3, 7) or the “tin....” in *tīntāl* (m. 10-13) clearly draw attention to those beats and are both an aid to time-keeping and a contributor to rhythmic character.

There are many more subtle variations in timbre of course, as there are many possible drum strokes. The type of *bol*s and their combination, and their derivation from either *tablā* or *pakhāvaj*, are important contributors to the *tāl*’s character. One reason for this is that the *pakhāvaj* is severely limited in its possible degree of pitch modulation, compared with the *tablā*. Such modulation, achieved by varying the pressure applied to the left drum head (*bāyā*) with the heel of the hand, is a prominent feature of most styles of *tablā* playing. This plays an important role in the characterisation of several *tāls*, including *kaharvā* and *tīntāl*, where it may be seen as a kind of pitch accent.<sup>42</sup> An illustration of pitch modulation is given below;

*kaharvā tāl*: 8 mātrās, 4+4

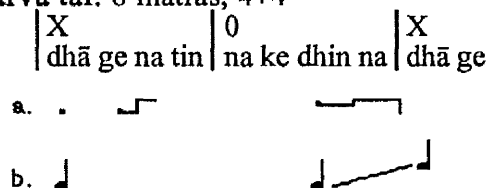


fig 2.13: Two possibilities for *bāyā* pitch modulation in *kaharvā tāl*, from (a) Stewart [1974:90] and (b) Manuel [1983b:304].

Thus four different categories of accent may be distinguished in *ṭhekās*, and each *tāl* may thus be analysed in terms of these accents. It must be borne in mind that a repeated *ṭhekā* possesses a single ‘dynamic form’ (cf. 1.2.2), synthesising all these elements, and it is this form which conveys the *tāl*’s ‘character’; the conceptual separation of these categories of accent is useful nevertheless.

## 2.4: Cyclicity

It is often said that *tāl* is a cyclical system, and this thesis has already discussed the metaphysical importance of the concept.<sup>43</sup> But what is meant by cyclicity in practical terms,

<sup>42</sup>See Stewart [1974:89-91].

<sup>43</sup>See 1.2.1.

and why is Indian rhythm cyclical rather than merely regular or repeating? All *tāls* may be considered as cyclic structures in some sense, yet the length of the ‘cycle’ varies from less than 2 seconds to over a minute; the significance of these *tāls*’ cyclicity is surely very different. All are certainly ‘repeating’ structures, but perhaps we should reserve the term ‘cyclic’, whose implication of the first beat functioning also as the last applies more to some *tāls* than to others (and perhaps more importantly, more at moderate and fast, than at slow tempi).

Many of the world’s rhythmic systems feature regular and indefinitely repeating patterns of a fixed number of beats, but not all of them are cyclical to the same degree or in the same way as that of North India. Much of the Western classical repertoire features such repeating structures (commonly bars of 2, 3, 4 or 6 beats), but they are rarely if ever referred to as ‘cycles’; we might call the predominant Western conception ‘linear rhythm’ in contrast to the Indian ‘cyclic rhythm’.<sup>44</sup> Javanese gamelan music definitely is organised cyclically, but in contrast to Indian *tāl* the structurally important beats are always the last of a (usually binary) group.<sup>45</sup>

In Indian *tāls* the most important beat, *sam*, is both first and last; it is usually written as first, but more often than not functions as last in that it is the beat upon which rhythmic tensions are resolved. It is this ambiguity of the function of *sam* and the cadence-oriented improvisatory style, which are the practical manifestations of this cyclicity.

Even within Hindustānī music, the importance of cyclicity and the means of its expression vary with context. Factors which influence this include tempo, genre, type of composition, improvisation and accompaniment style: cyclicity is another variable of Indian rhythmic organisation.

#### 2.4.1: *Thekā* and cyclicity: the case of *tīntāl*

Some of the major indicators of cyclicity are to be found in the *thekā*. *Tāls* with a high degree of cyclicity balance the sense of counting from *sam*, (“*dhā dhin dhin dhā...*”) with one of approach to *sam* (“*....dhin dhin dhā dhā*”). The most important ways of doing this

<sup>44</sup>Writers who have commented on this dichotomy include Becker [1981:163], who writes “Cyclic time and linear time are represented musically and elements of both are found in all music systems.”

<sup>45</sup>“The *gatra*, like all Javanese musical units, is weighted at the end” [Becker 1980:81].



in a *ṭhekā* are with cadential patterns (especially in *pakhāvaj ṭhekās*, eg “tira kita gadi gana dhā”) or with a combination of dynamic and timbre accents and pitch modulation in many *tablā ṭhekās*. The phenomenon of end-accented rhythm, while not so all-consuming as in much South-East Asian music, is an important one in North India. For example in *tīntāl* there is a psychological factor inherent in the *ṭhekā* which causes the *bol* “dhā” of *mātrās* 1, 5 and 9 to be heard as the last of a 4 *mātrā* group “dhin dhin dhā dhā”. This makes the last 3 *mātrās* of the cycle function as an anacrusis leading to *sam*.

*tīntāl*<sup>46</sup> : 16 *mātrās*, 4+4+4+4

X	dhā	dhin	dhin	dhā	2	dhā	dhin	dhin	dhā	0	dhā	tin	tin	tā	3	tā	dhin	dhin	dhā	X	dhā
<div style="display: flex; justify-content: space-around; width: 100%;"> <span style="border-top: 1px solid black; width: 15%;"></span> <span style="border-top: 1px solid black; width: 15%;"></span> <span style="border-top: 1px solid black; width: 15%;"></span> <span style="border-top: 1px solid black; width: 15%;"></span> <span style="border-top: 1px solid black; width: 15%;"></span> </div>																					

fig 2.14: *Tīntāl*, *ṭhekā* with an alternative grouping shown by square brackets.

This interpretation appears to be supported by research into rhythm perception by Fraisse, who suggests that rhythmic groups of 2 weak (W) and 2 strong (S) beats tend to be perceived as WWSS or SSWW, but not as SWWS [1978:237]. Although the timbre distinction between “dhā” and “dhin” (“tā/tin”) is as important as the dynamic (and one must therefore have slight reservations about calling “dhā” strong and “dhin” weak), if we can regard this distinction as one of dynamics then we have to interpret the *vibhāg* grouping “dhā dhin dhin dhā” as analogous to SWWS, whereas the alternative grouping suggested here (fig 2.14), “dhin dhin dhā dhā” appears as a more natural WWSS.<sup>47</sup>

To summarise this interpretation, *tīntāl* can be regarded as four groups of four *mātrās* each, and the groups consisting of an end-accented pattern (“dhin dhin dhā dhā”, ie WWSS), the third group being distinguished by the absence of the resonant bass stroke “ge/ghē”.<sup>48</sup> This explains the apparent shift in *khālī vibhāg* by one *mātrā* (see above, 2.2.3). The hand gesture comes on the strongest beat of the group, the last, with the final *mātrā* of the last group the most important of all, *sam*. This is one of many instances of the

<sup>46</sup>There is another designation where *sam* is counted as the second clap of the cycle, viz X 3 0 1 (=1 X 3 0). The second *tālī* of the cycle is called *pichlī* (lit: last), and the third *tālī* called *pahlī* (lit: first). Confusing as this is, it does have a certain logic to it. It confirms that the *tālī* may be conceived as a cycle, since the implication is that the last *tālī* is reckoned as the first of a sequence of three. (see Bhowmick [1981:56], Ghosh [1968:67], and Sargeant [1931:433]).

<sup>47</sup>This question needs further clarification, as the dynamic balance between “dhā” and “dhin” strokes varies, especially with tempo. My intention here is to illustrate the necessity of breaking away from the restraints of current theory and notation.

<sup>48</sup>This interpretation is shared by Powers, who writes; “DHĪN DHĪN DHĀ DHĀ coming up to sam is the nuclear formula, not DHĀ DHĪN DHĪN DHĀ beginning from sam” [1980:123].

importance of end-accented patterns in Indian rhythm, which we might call anacrustic rhythm.

There is a tension between the conventional interpretation of *tīntāl*'s divisions and counting pattern ("dhā dhin dhin dhā") and the psychologically more natural one implicit in the *ṭhekā* ("dhin dhin dhā dhā"). This tension need not be resolved since it is this very tension which augments the sense of cyclicity in *tīntāl*. The case of *tīntāl*, as interpreted above, is the clearest illustration of a truly cyclical *tāl* in action; it represents a singularly neat and elegant example of a subtle concept, and perhaps this is the secret of its current predominance. In *tīntāl* one is constantly aware of both the journey from and the anticipated arrival at *sam*, and this dual perception is stronger here than in most other *tāls*.

#### 2.4.2: Cyclicity in practice

As noted above, cyclicity is a variable of rhythmic style in North Indian music; it is also influenced by other variables, especially tempo. This sense of cyclicity is at its weakest in *barā khyāl tāls*, because the slow tempo makes perception of the cycle as an integral unit too difficult (cf. 3.2.2). Although the structural principles of these *tāls* are no different, there is no direct sensation of cyclicity here. The function of creating an expectation of *sam* is achieved through other means; a tightening up of the rhythmic structure is indicated by a more syllabic style, an increase in the rhythmic density, even on occasions a slight acceleration towards the end of the cycle, associated with the reiteration of the composition's *mukhrā* (anacrusis).

In fast tempo pieces in contrast, the rapid recurrence of the same drum pattern makes the essential cyclicity palpable. Indeed in some cases, the lack of a clear dynamic accent on *sam* can be a handicap in counting *tāl*, as one has a sense of looking for the join in a continually revolving circle.

The musical significance of a feeling of cyclicity is that it encourages and supports a highly organised form of improvisation, the main structural pivot of which is *sam*, at the end of each cycle. A soloist may begin a section of development or improvisation at any point (depending on the genre), but the way it ends is much more significant.<sup>49</sup>

<sup>49</sup>The most common ways are with a climax either on *sam* or before the starting point of the composition, the *mukhrā*.

### 2.4.3: Summary: *tāl* functions and the theoretical model of rhythmic organisation

The aim of chapter 2 was to look at *tāl* from a phenomenological perspective, in order to build on the theoretical model proposed in 1.4. In particular, the relationship between the three main categories of function- quantitative, qualitative and cyclic- and the phenomena of *tāl* (especially clap patterns and *ṭhekās*) was to be considered. This has been achieved by means of reference to particular *tāls* and their application in practice.

One clear correlation may be recognised between the quantitative function of time measurement and clap patterns. Qualitative functions- such as the accentual patterns associated with most *tāls*- were shown to be largely dependent on the *ṭhekā*. No such clear correlation could be established with the function of cyclicity: this confirms that cyclicity is largely a conceptual phenomenon- in effect the music is cyclic because people believe it is or should be cyclic (cf. 1.2.1). This fact is confirmed by performance practice in improvisation, and in some cases by factors inherent in the *ṭhekā* and its relationship with the clap pattern (2.2.3).

However, neither the correlation between clap pattern and time measurement, nor that between *ṭhekā* and *tāl*'s qualitative hierarchy and character, are exclusive- they are intimately related. The *ṭhekā* often plays a part in supporting the time measuring function; since the concept of cheironomy predates that of the *ṭhekā* in classical music, it is indeed likely that in some cases *ṭhekās* have evolved or been devised to complement *tāls* which previously had none. In the case of *tāls* which have been absorbed from the folk into the classical realm, the opposite process may have occurred- clap patterns being created in order to support the qualitative hierarchy of the *ṭhekā*. However, since there are numerous examples where the structures implied by these features do not concur- producing apparent anomalies- there may be many more historical factors involved than these.

What is interesting from the viewpoint of this thesis, is that the usage of clap pattern and *ṭhekā* varies with context, as does the relationship between these phenomena and the main categories of *tāl* functions. This variability is to some extent associated with the different performance practice of different genres, and with the implications of different



practice confirms both the diversity of rhythmic organisation in North Indian music, and the usefulness of a detailed theoretical model of metric structure in describing it.

### Chapter 3: Lay: tempo and rhythmic density

*Lay* is one of the most important rhythmic concepts in Indian music. It has long been recognised as the principle which regulates musical time<sup>1</sup>; it has also been appreciated that *lay* is largely responsible for the aesthetic character of music.<sup>2</sup> *Lay* is a difficult concept however, because its meaning and significance have changed substantially over history. It is an ancient concept which may be only imperfectly applicable to modern music, and from this fact arises an ambiguity in meaning.

This chapter will consider *lay*- and its nearest Western equivalents, tempo and rhythmic density- as they apply to North Indian music. Study of the concept will contribute to the theoretical discussion begun in chapter 1; measurement of *lay* in practice provides empirical data which confirms several of the points elaborated in that analysis.

#### **3.1: The importance of lay in Hindustānī music**

The concept of *lay* is one which has developed and expanded over the course of time to the point where it could be considered an equivalent of the English term 'rhythm' in almost all of that word's diverse senses. The original meaning of '*lay*' however is the interval or time-span between two beats<sup>3</sup>; derived from this is the concept of 'tempo' since the tempo of a piece of music is determined by the time-spans between beats (taking 'beat' as a point in time marked by an action, as the ancient Indians did). When Indian musicians speak of a 'good sense of *lay*', they mean an ability to generate rhythmic variations while retaining awareness of *tāl* and control of tempo. Loosely interpreted then, a 'good sense of *lay*' is simply a 'good sense of rhythm'; hence the apparent equivalence of the terms *lay* and rhythm and Powers' comment, "*Laya* is extended to cover the semantic field of 'rhythm and tempo' in the same way that 'rhythm' in the West covers a semantic field comprising 'rhythm and metre' " [1980:118].

The text below will consider certain issues concerning *lay* in the sense of tempo (and by extension, the related issue of rhythmic density), and its role in Hindustānī music.

<sup>1</sup>The importance of *lay* is stressed in the saying "*śrutirmātā layaḥ pitā*"- "*śruti* (ie. tone) is the mother and *lay* the father [of music]". See Sambamoorthy [1964:100].

<sup>2</sup>Ranade and Chavan cite the Viṣṇudharmottara Purāṇa, which correlates *lay* to *ras* (aesthetic essence) [1976:3]. This is also noted by Danielou [1957:70].

<sup>3</sup>See Rowell [1988:145].

Firstly there is the question of what we mean by *lay*- whether *lay* primarily refers to the perceived rate of the metric structure, or to the rate of rhythmic events (rhythmic density), or indeed to the ratio between the two (it can mean any of these things, although the sense is usually clear from the context).

Thus we must examine the factors which influence our perception of the pace of a piece of music, referring to the models of rhythmic organisation and metric structure outlined in chapter 1: these factors will include the rhythmic density of surface rhythm patterns (in the melodic and/or percussive lines), the rate of succession of the *mātrās*, and on occasions the rate of some other metric level which comes to the fore, and is perceived as the effective pulse rate when the *mātrā* rate is either too slow or too fast to fulfil this function. Much of what follows is naturally concerned with the measurement of these different rates, and includes measurements of performance tempi.

### Lay as tempo

Three tempo categories are traditionally recognised in Indian music, namely *vilambit*, *madhya* and *drut* (slow, medium and fast). Since in modern times the range of performance tempi has increased considerably at both extremes, it is helpful to add two further categories (*ati-vilambit* and *ati-drut*); some musicians also find occasion to use intermediate categories (*madhya-vilambit* and *madhya-drut*), giving a total of seven potential bands;

lay	tempo
<i>ati-vilambit lay</i>	very slow tempo
<i>vilambit lay</i>	slow tempo
<i>(madhya-vilambit lay</i>	medium-slow tempo)
<i>madhya lay</i>	medium tempo
<i>(madhya-drut lay</i>	medium fast tempo)
<i>drut lay</i>	fast tempo
<i>ati-drut lay</i>	very fast tempo

fig 3.1: Tempo (*lay*) designators for Hindustānī music.<sup>4</sup>

In this way *lay* translates the Western concept of tempo, the perceived rate of pulsation of a piece of music. Within the Indian context however, there is some ambiguity

<sup>4</sup>Cf. Shankar [1969:29]. These terms are not used with great empirical consistency, but are used as approximate designators, eg. on record sleeves.

over whether *lay* in this sense refers exclusively to the rate of succession of the *tāl*, or whether it is also dependent on surface rhythmic density. Indeed, the latter case is explicitly allowed when musicians speak of ‘increasing the *lay*’, not only when increasing the tempo, but also when increasing the rhythmic density by subdividing the pulse in generating surface rhythm.

### **Lay as the ratio of rhythmic density to tempo**

It will therefore be necessary to use terms which refer to the ratio of rhythmic density to tempo, dependent on subdivision of the metric pulse to generate rhythmic variation (cf *laykāri*, ch. 5). Terminology is diverse and often confusing, but some of the more common terms are given below.<sup>5</sup>

<b>lay</b>	<b>rhythmic density: tempo (metric pulse)</b>
<i>barābar (lay)</i>	1:1
<i>derh (derhī lay)</i>	3:2
<i>dugun (dugunī lay)</i>	2:1
<i>tigun (tigunī lay)</i>	3:1
<i>caugun</i>	4:1
<i>pāñcgun</i>	5:1
<i>chegun</i>	6:1
<i>sātgun</i>	7:1
<i>āthgun</i>	8:1

fig 3.2: Terms describing *lay* as the ratio of rhythmic density to tempo (*lay* ratio).

Moreover, since there is a clear affinity between such ‘*lay* ratios’ with the same factor in the numerator (eg. between 3:2, 3:1 and 6:1), other sets of terms group these levels, as in the following table. The first column uses *lay* in a qualitative rather than a quantitative sense, the second another term, ‘*jāti*’ (lit: class), used in a similar sense, particularly in South India but also in some Hindustānī *gharānās*. This list is not exhaustive, since the terminology is not standardised across the tradition as a whole; moreover some of the terms given below have other interpretations. This topic is discussed in more detail in 5.2.1.

<sup>5</sup>See chapter 5 for more detail.



lay	jāti	groups of:
<i>āṛī lay</i>	<i>tryaśra jāti</i>	3 (3:2, 3:1, 6:1 etc)
	<i>caturaśra jāti</i>	4 or 8 (2:1, 4:1 etc)
<i>kuāṛī lay</i>	<i>khaṇḍa jāti</i>	5 (5:4, 5:2, 5:1 etc)
<i>viāṛī lay</i>	<i>miśra jāti</i>	7 (7:4, 7:2, 7:1)
	<i>saṅkīrṇa jāti</i>	9 (very rare)

fig 3.3: Terms for *lay* reflecting the categorisation of *lay* ratio by numerator, with equivalent 'jāti' terms.

### Lay in practice

We must consider the questions of the tempo characteristics of the different genres, and tempo variation in performance practice. It may be necessary to use any or all of these terms- for tempo (in fig 3.1), the ratio of rhythmic density:tempo (fig 3.2) and the qualitative grouping of such ratios (fig 3.3)- in discussing *lay*. Beyond this, the understanding of *tāls* as stratified metric structures will also help in clarifying the processes involved in 'divisive *laykāṛ*' (rhythmic variation based in principle on mathematical subdivision of the *mātrā*- see ch 5), and the relationship of the density of surface rhythm to the metric structure. Having established a terminological and analytical framework for the study of *lay*, 3.2 will consider empirical data on *lay* and its variation in performance, and the implications of that data.

#### 3.1.1: Tempo in the context of metrical structure

The questions of how tempo is perceived and how it may be objectively measured have been problematic for those few musicologists who have addressed the issue. In practice however, tempo is usually understood to be a function not of the surface rhythm<sup>6</sup>, but of the underlying beat or metrical structure. Consonant with this approach, the measure of tempo generally adopted in North Indian music is the rate of succession of the basic time-units, the *mātrās*. However in practice, the assumed function of the *mātrā* as the predominant pulse rate, in effect the highest metrically significant pulse level, is in many

<sup>6</sup>See however Kolinski [1959], who regards it as just that. His idea that for comparison between cultures, rhythmic densities form a more objective measure than a subjectively defined 'beat' is entirely credible; it is not however so useful for discussion of a single music culture, especially one (such as North Indian music) with sophisticated indigenous rhythmic concepts.

cases shifted to some other pulse level (1/2 or 1/4 *mātrā* divisions, or groups of 2, 3 or 4 *mātrās*). As a result, *mātrā* rates are not strictly comparable as tempo measurements.

The *mātrā* was originally a standard and notionally invariable time unit in Indian music<sup>7</sup>: *tāl*s were composed of various time units (the *laghu*, *guru*, *druta* etc), which were reckoned as fractions or multiples of the *mātrā*. Hence the ratio between the time units employed and a fixed time-unit (the *mātrā*) functioned as a practical measure of tempo. From being a fixed time unit, as the music developed the *mātrā* became increasingly flexible: so that ultimately the length of the *mātrā*, rather than the combination of various time units, became the measure of tempo.

The *mātrā* has become a totally flexible measure of time: nowadays the *mātrās* in the fastest music are less than 0.1 sec long; in the slowest they are over 5 sec in duration. This means that tempo measurements based on *mātrā* rates vary from <12 to >600 MM: however, since at the slowest tempi the *mātrās* are consistently subdivided to provide the effective pulse of the music, and at the fastest rates the *mātrās* are perceptually grouped for the same reason, these measurements provide an exaggerated impression of the range of perceived tempi.<sup>8</sup>

In order to provide a meaningful measure of tempo we must acknowledge that in some cases *tāl* structures have become temporally distorted, to the extent that the metric functions of *tāl*'s various structural levels change or are abandoned altogether. The *tāl* system provides the two levels necessary in any metric structure<sup>9</sup>, the *mātrā* and the *āvart*, as well as at least one intermediate level, the *vibhāg*, which may be more or less relevant according to context. The manipulation of the *tāl* structures to permit both very slow and very fast tempi means that other metrical levels come into play, and the levels described by 'āvart' and 'mātrā' may shift or diminish in metric importance. These other metric levels must be taken into account when reckoning the effective tempo of a piece of music.

<sup>7</sup>The term *mātrā* is defined in the Nāṭyaśāstra (pre-C5) as the time of five *nimeṣas* (lit: twinkling of the eye) [BhNS 31.3, cited in Nijenhuis 1970:324]. The Saṅgītaratnākara (C13) defines the *mātrā* as the time taken to pronounce five short syllables [S.R. 5.16, cited in Gautam 1977:341]. Gautam estimates the *mātrā* as 1.2sec., giving a *mātrā* rate of 50 MM. Rowell's estimate on the same basis is 60-72 MM [1988:150]. I find these figures a little low; my own experiments, using 5 short Sanskrit syllables, yielded figures of 0.67-0.94 sec, which would give *mātrā* rates of ~70-90 MM.

<sup>8</sup>Sachs had difficulty accepting a ratio of 1:8 between the slowest and fastest performance tempi [1953:32]. A ratio of 1:60 (12:720) is possible for rhythmic densities, but certainly not for rates of *metric* progression.

<sup>9</sup>See eg Yeston [1976:67] and Lerdahl and Jackendoff [1983:19], and 1.4.1.

Moreover, if the surface rhythm is to be interpreted with respect to the *tāl* structure, these changes in performance practice mean that it is often more meaningful to consider the surface rhythm with respect to a metric level other than the *mātrā*. The ratio of surface rhythmic density to underlying pulse level is an important consideration in Hindustānī music: terms for this ratio are also expressed using the term *lay* (see fig 3.2, above).

Although this concept of *lay* as the ratio between rhythmic density and a constant metric pulse rate has its roots in ancient and medieval practice (ie. when the *mātrā* was an arbitrary and invariable time unit, tempo was defined as the rate of its subdivision), it now has to compete with the concept of *lay* as metric pulse rate itself. Similarly, the ideal of acceleration as increase in the rate of subdivision of the metric pulse (*laykārī*, see ch 5) has to compete with the practice of gradual acceleration of the metric structure, and as a result the former concept has diminished in importance.

The concept of *lay* as the rhythmic density:pulse rate ratio is a traditional one and represents syllabic values (metric structure as a constant, and surface rhythm derived in a clear relationship to it). Within this framework, acceleration must be understood as a change in the rhythmic density only. Thus the theoretical acceptance of gradual acceleration of metric tempo, which has come relatively recently, marks an erosion of these values.

### **Determining the effective pulse rate**

Selecting a pulse level to serve as a measure of tempo may remain difficult: while there is a clear case for adjusting our interpretation to allow the recognition of a level other than the *mātrā* in this role, as a necessary response to changes in practice, it involves subjective analyses which may be problematic. Lerdahl and Jackendoff, who tried to determine such pulse rates (their 'tactus') in Western music, found that it was frequently impossible to choose objectively between two pulse levels (usually in the ratio 2:1). In Hindustānī music, if two such pulse rates are present and one of them is regarded by generally accepted theory as the *mātrā*, we naturally have no hesitation in selecting that level as primary. If neither level may be so designated, we may have problems choosing between the two, and for this reason we should be cautious. If necessary we may have to nominate two such levels, since the various factors which influence the listener's subjective interpretation of metric structure may not influence each listener in the same way.

The type of metric pattern illustrated in fig 1.3, with three basic levels (*āvarṭ*, *vibhāg* and *mātrā*) and occasionally an extra intermediate level (such as the half-*āvarṭ*), will be the predominant one at moderate tempi (c. 30-180 MM). In this case, tempo is determined by the *mātrā* rate. In *atī-vilambit lay*, the 1/2 or 1/4 *mātrā* subdivision may replace the *mātrā* in function; in *drut* and *atī-drut lays* the 2- or 4-*mātrā* level (which is in many cases the *vibhāg* division) takes on this function. The metrical significance of the *vibhāg* level varies with *tāl* and context, as does that of other intermediate levels such as the half cycle division, (which reflects the symmetrical *tālī/khālī* division of many *ṭhekās*). These points will be illustrated using metric dot notation.

It is clear that in any case not just one, but several levels of pulse or recurrence may be determined in any piece of metrically bound (*nibaddh*) music. These range from the surface rhythmic density down to the rate of recurrence of the *tāl* cycle, with a number of significant intermediate levels. The basic principle of Indian metric organisation remains, despite numerous changes in performance practice over the centuries, that surface rhythmic patterns overlie a consistent metric structure determined by the *tāl*. Neither the fact that in some cases (in melismatic styles), the relationship between surface rhythm and *tāl* structure is not clear, nor the hypothesis that the function of those structures has been considerably distorted by their extension or compression, should invalidate this primary model. The figures below illustrate both the basic model or paradigm, and the effect of its distortion by extreme shifts in tempo. The first covers the compression of the *tāl* structure at very fast tempi;

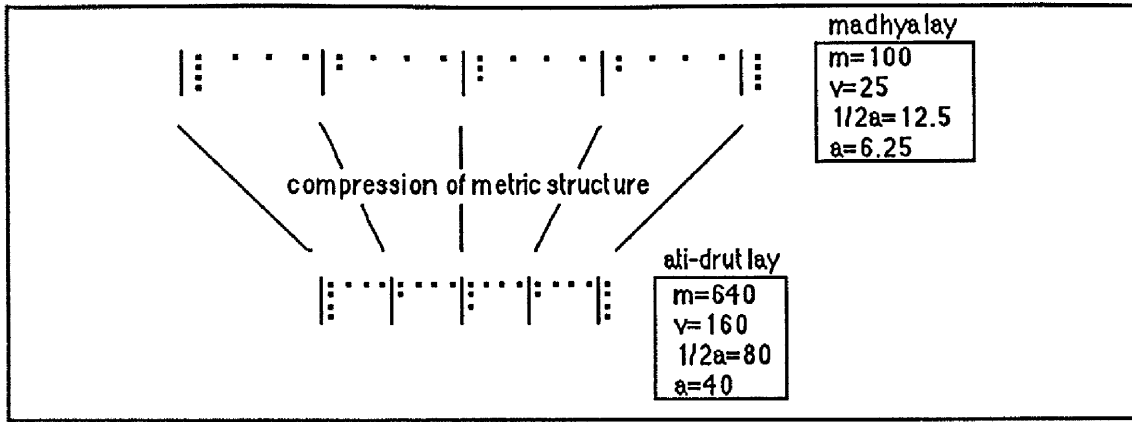


fig 3.4: An illustration of the compression of *tāl* structure at very fast tempo.<sup>10</sup>

When the metric structure is compressed, the listener counts the *vibhāg* as the ‘beat’, giving a tempo shift of 100 to 160MM, not 640MM (the higher rhythmic density in *ati-drut lay* would also be significant however). The next figure shows the opposite phenomenon, the expansion of the metric structure at slow tempo;

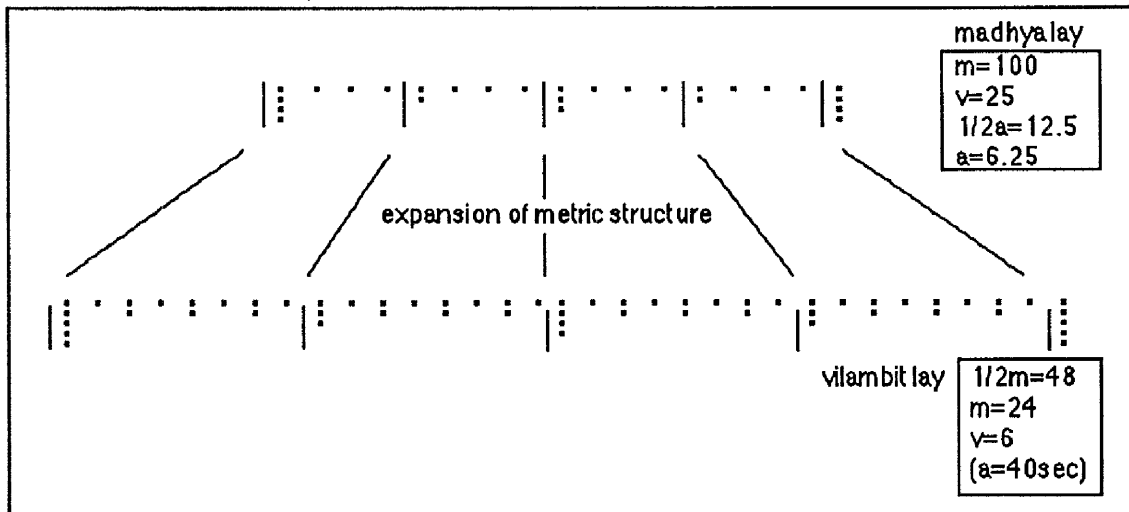


fig 3.5: An illustration of the expansion of *tāl* structure at very slow tempo.

Figure 3.5 illustrates that when the metric structure is expanded, the listener counts the half-*mātrā* pulse as the ‘beat’, giving a tempo shift of 100 to 48MM, not 24MM. Comparing the three illustrations (of *tīntāl* in *madhya lay*, *ati-drut lay* and *vilambit lay*), we see how the difference in *mātrā* rate (of 24MM in *vilambit lay* to 100MM in *madhya lay* to 640 MM in *ati-drut lay*), compares with the difference in effective tempi (48MM of the 1/2-*mātrā* level in *vilambit lay* to 100MM of the *mātrā* level in *madhya lay* to 160MM of

<sup>10</sup>Both fig 3.4 & 3.5 feature the 16-*mātrā tīntāl*. [key: all figures refer to rates of pulsation (MM); m=*mātrā*, v=*vibhāg*, a=*āvart*.].

the *vibhāg* level in *ati-drut lay*). This illustrates the hypothesis that the effective tempo range in Hindustānī music is much less than it would appear from measurements of *mātrā* rates.<sup>11</sup>

### 3.2: The measurement of lay

#### 3.2.1: Determining lay (tempo and rhythmic density)

Despite the important points made above, in most cases the appropriate measure of tempo will remain the *mātrā* rate. This is because musically literate listeners, not to mention performers, will interpret the *mātrā* as the primary pulse whenever this is practicable, because they know the theoretical structures. In certain cases where a listener not educated in the music system might be inclined to take the 1/2- or 2-*mātrā* pulse as primary, the knowledgeable listener will resist this; this factor makes a wide range of perceived tempi possible. However, at extreme tempi such an adjustment of perceived pulse is perceptually unavoidable, and our understanding of both metric structure and tempo must take account of this.

One other phenomenon complicates matters further. In irregular *tāls* such as *rūpak* (3+2+2) and *jhaptāl* (2+3+2+3), as the tempo increases so the pulse level (at which listeners would tap their feet) shifts from the *mātrā* to the *vibhāg*, giving an irregular pulse. Since it would be of limited value to give an average value for this pulse, the *mātrā* rate must be retained as the basis of tempo measurements.

Another level must be taken into consideration, to supplement our understanding of perceived tempo<sup>12</sup>; namely the rhythmic density. Rhythmic density is the measure of the speed of articulation, the speed of the performers' physical movement. In this context,

<sup>11</sup>One does come across illustrations of the fact that musicians have taken this on board: *ektāl* may be referred to as a *tāl* of 24 or 48 beats, rather than the standard 12 (See eg Bhowmick [1975:40] "Baḍā Khayāl of long durations Ek-Tāla (48 beats), Jhumrā-Tāla (56 beats) and Tilvārā-Tāla (64 beats)...."), and *kaharvā* is often quoted as 4 *mātrās* rather than 8 (See eg Ratanjankar [1967:121]). However, such designations have not become standardised or even consistently used; it may even be that the trend is in the opposite direction, to standardising the number of *mātrās* designated for each *tāl* while releasing the concept of *mātrā* from its functional significance.

<sup>12</sup>Several authors have pointed to the importance of *predictability* of events in the perception of tempo [see eg. Dowling and Harwood 1986:182], yet this is beyond the scope of this thesis.

density effectively means speed, and is as much an indicator of tempo as is the rate of metric pulses (see Kolinski 1959).

It is appropriate in a study of this particular music culture to use the rate of metrical movement as the principal measure of tempo, so far as it may be determined, using rhythmic density as a secondary indicator. Average rhythmic densities of surface patterns are of relatively limited use (although more so in music of melismatic style, where accurate determination of articulation points can be difficult), especially when we have the understanding of metric structures to allow us to study the composition of surface patterns and their relationship to those underlying structures. As far as rhythmic density is concerned, the maximum value, and an appreciation of the relationship between this and the primary metric pulse (which may stand in a simple mathematical proportion, eg 3:2 or 4:1) are of the most significance.<sup>13</sup>

Another factor which needs to be considered on occasions (although perhaps not strictly speaking an indicator of *lay*) is that of the length of the *āvart*. The *tāl* cycle is the largest regularly repeating time unit; moreover the first beat (*sam*) is highly significant structurally, as it frequently marks the coming together of the rhythmic streams of soloist and accompanist, and the resolution point for rhythmic tension. Therefore, since two pieces with the same metric tempo and rhythmic density but in different *tāls* may have very different cycle lengths, this is of considerable significance for the metric structure of the music. In fact, since very slow *khyāl tāls*, almost without exception, display a considerable degree of subdivision of the *mātrā*, the effect of slowing the *tāl* down is much more marked on the cycle length than it is on the effective metric tempo.

As will be argued later (3.2.2), *tāl* functions are altered in very slow tempo pieces, principally because the cycles become too long to be directly perceived as single perceptual entities. In the same way, metric structure is affected since such a long time span cannot be considered a metric pulse level, rather it may be regarded as a higher-level organisational unit. Thus the principal measure of *lay* will be the tempo- as determined by the *mātrā* rate, except where this rate has clearly been displaced in function by another metric pulse

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<sup>13</sup>See 7.3.4, 8.3.4.

level. In addition to this, we must consider another indicator of *lay*, **rhythmic density**, and the relationship between these two levels (*lay* ratio).

Before giving measurements from performance, these measurements (and in particular those of tempo) should be placed in context, by looking at the theories of various musicologists. Dürr and Gerstenberg suggest that a pulse rate felt as moderate is that of the human heartbeat, 60-80 MM; less than 60 is perceived as slow, more than 80 as fast [1980:806]. Stewart suggests a mean for *madhya lay* of 90 MM, apparently based on an estimate of 80-90 MM for the heartbeat [1974:81, see also Ranade 1961:122<sup>14</sup>]. Sachs rejected the idea of a basis for tempo in the heartbeat, suggesting instead “the regular stride of a man walking leisurely” as the physiological basis [1953:32]. His figure is nevertheless consistent with those above, “76-80 M.M.”. Dowling and Harwood claim that evidence of any physiological basis is unconvincing: however, citing psychological research, they state that;

“Though the evidence is often weak, it points in the direction of a natural pace for psychological events of 1.3 to 1.7 per second (i.e.....between 80 and 100 beats/min). This agrees with the intuitions of musicians regarding a moderate tempo...”  
[1986:182]

No doubt the exact figures would be dependent on a number of factors in the musical context, and there may be variations between cultures; however, whatever the physiological and/or psychological basis, it is reasonable to take the range of 60-100 MM as a rough guide of what may be felt as ‘moderate’, with a mean around 80 MM.

### 3.2.2: Lay in performance

The following observations are based on measurements of over 100 performances, including examples of all the ‘classical’ genres of Hindustānī music.<sup>15</sup> Cycle lengths were measured with a 1/100sec stopwatch<sup>16</sup>: these time-span measurements were converted to *mātrā* rates using a computer spreadsheet application, which also calculated changes in

<sup>14</sup>“In the normal condition it [the heartbeat] is between 80 and 90 beats per minute. So the ancients used to adopt this natural unit of *Laya* as their standard. In our everyday language we may call it a standard *Matra*” [Ranade 1961:122].

<sup>15</sup>I.e. *dhruvad*, *dhamār*, *sādrā*, *khyāl*, *ṭappā*, *ṭhumrī*, *dādrā*, *tarānā*, instrumental *gat* (excluding drum solos and *kathak* dance).

<sup>16</sup>I estimate the error in readings at +/-1/10sec, reducible to +/-1/20sec in some cases where measurements were repeated up to 3 times and averaged. Later measurements have been made with a computer-based timer which I have developed, which gives readings of comparable accuracy.



tempo from cycle to cycle (expressed as a percentage, see 'acceleration' in the chart below), and plotted graphs of tempo against cycle. An example of the procedure is given below; the table is part of a spreadsheet from one such performance, and the tempo chart below was generated directly within the spreadsheet application.

	time1 (secs)	time2 (secs)	time (ave)	tempo(MM)	acceleration
<i>ālāp</i>	2'03.22	2'03.09	2'03.15		
cycle 1	30.02	30.01	30.02	32.0	
c2	28.68	28.64	28.66	33.5	5%
c3	27.72	27.83	27.78	34.6	3%
c4	27.62	27.52	27.57	34.8	1%
c5	27.27	27.24	27.26	35.2	1%
c6	26.96	27.02	26.99	35.6	1%
c7	26.10	26.02	26.06	36.8	4%
c8	26.06	26.09	26.08	36.8	0%
c9	25.68	25.66	25.67	37.4	2%
c10	25.89	25.88	25.89	37.1	-1%
c11	25.53	25.60	25.57	37.6	1%
c12	25.10	25.09	25.10	38.3	2%
(continued)					

fig 3.6: Detail of spreadsheet showing measurements of cycle lengths, with calculated tempo and acceleration figures. From a *khyāl* performance by C.R. Vyas (see below, fig 3.7).

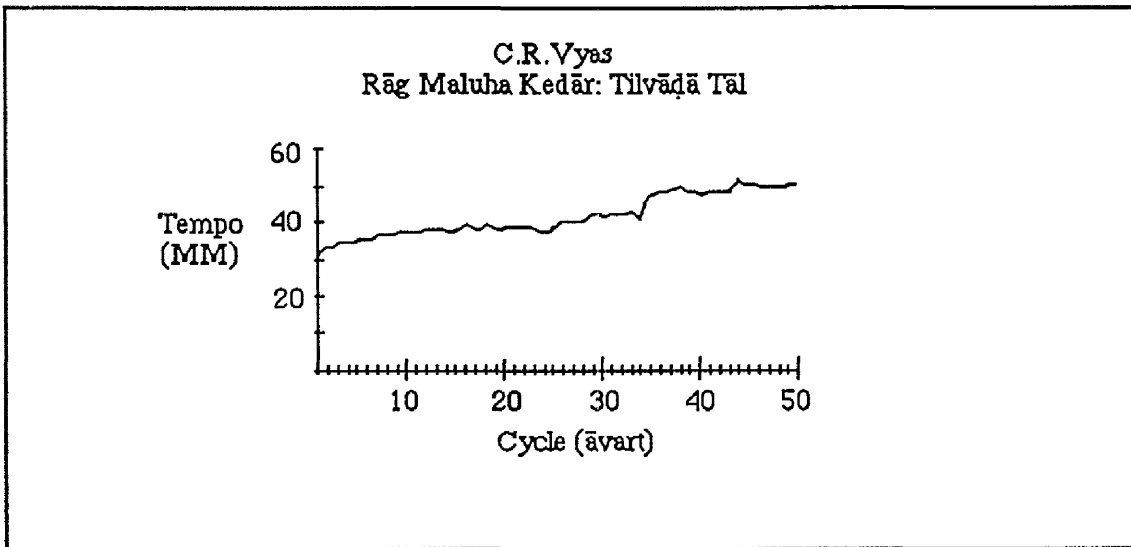


fig 3.7: A graph of tempo (*mātrā* rate) plotted against cycle, generated from the spreadsheet illustrated above (fig 3.6).

### Tempo

The following chart gives maximum and minimum tempo (*mātrā* rate) figures for the most common Hindustānī *tāls*, abstracted from measurements such as those illustrated above.

The tempo ranges are distributed through several columns to allow comparison of the same *tāl* in different genres. Each set of figures is compiled from a number of different performances, and in no way implies that each performance utilises all or even most of the possible tempo range.

tāl	mātrās	vocal genres			instrumental genres
		khyāl/ ṭappā	tarānā/ ṭhumrī/ dādrā	dhrupad/ dhamār/ sādrā	gat (sitār/ sarod unless stated)
<i>jhūmrā</i>	14 (28/ 56) <sup>17</sup>	12.7-39 ( <i>khyāl</i> )	-	-	-
<i>ektāl</i> ( <i>vilambit</i> )	12 (24/48)	10.7-42 ( <i>khyāl</i> )	-	-	-
<i>tilvādā</i>	16 (32)	21-51 ( <i>khyāl</i> )	-	-	-
<i>tīntāl</i> ( <i>vilambit</i> )	16 (32)	25-60 ( <i>khyāl</i> )	-	-	32-105
<i>cautāl</i>	12	-	-	39-125 ( <i>dhrupad</i> )	56-77 ( <i>bīn</i> )
<i>dhamār</i>	14	-	-	54-128 ( <i>dhamār</i> )	107-129
<i>jhaptāl</i>	10	38-50 ( <i>vilam.</i> ) 52-69 ( <i>madhya lay</i> ) ( <i>khyāl</i> )	-	55-104 ( <i>sādrā</i> )	89-165
<i>rūpak</i>	7	29-33 ( <i>vilam.</i> ) 83-108 ( <i>madhya lay</i> )	97-113 ( <i>ṭhumrī</i> )	-	86-181
<i>tīntāl</i> ( <i>madhya lay</i> )	16	130-174	-	-	99-174
<i>tīntāl</i> ( <i>sitārkhānī/ pañjābī</i> )	16	60-92 ( <i>ṭappā</i> )	118-129 ( <i>ṭhumrī</i> )	-	96-140
<i>dīpcandī/ cāñcar</i>	14/16 (7/8)	-	77-90 ( <i>ṭhumrī</i> )	-	202-232 ( <i>bānsurī</i> )
<i>kaharvā</i>	8 (4)	-	130-160	-	165-187 ( <i>sitār</i> ), 389- 480 ( <i>bānsurī</i> )
<i>dādrā</i>	6 (3)	-	56-76	-	245-327
<i>sūltāl</i>	10 (5)	-	-	224-411 ( <i>dhrupad</i> )	-
<i>ektāl (drut)</i>	12 (6/3)	217-301 ( <i>khyāl</i> )	174-427 ( <i>tarānā</i> )	-	281-600
<i>tīntāl (drut)</i>	16 (8/4)	169-300 ( <i>khyāl</i> )	189-313 ( <i>tarānā</i> ) 302-500 ( <i>ṭhumrī laggi</i> )	-	234-738

fig 3.8: Tempo (*mātrā* rate) ranges for common Hindustānī *tāls*, as measured by the author.

<sup>17</sup>Figures in parentheses indicate the number of metric pulses, where the *mātrā* rate is too fast or too slow to function as a primary pulse. See text above. Spaces marked “-” are not applicable, ie. these *tāls* are not generally used in these genres.

The following observations may be made in connection with these figures (and the measurements from which they are derived). Firstly, the measured range in *mātrā* rate in these examples is 10.7 MM to about 730 MM. The perceived range in tempo is however much less than this. Taking the lower end first, all the examples in this sample below 21 MM showed consistent subdivision in the *ṭhekā* suggesting a basic pulse rate 2 or 4 times that indicated. For instance, the slowest example<sup>18</sup> had a clearly defined pulse at 4x the *mātrā* rate (ie at least 42.8 MM).

In my subjective experience, pulse rates of below about 30 MM (ie. *mātrās* > 2 sec in duration) feel extremely slow. Some singers manage to go considerably below this without consistently subdividing the pulse, but the minimum possible is probably around 20 MM (*mātrā*=3sec). The only exception to this I have found was a *baṛā khyāl* recording of Amir Khan, in which the *mātrā* rate drops to 12.7 MM (*mātrā*~4.7 sec) without subdivision.<sup>19</sup> This is a remarkable performance since the *ṭhekā* is virtually impossible to perceive as regularly pulsed, let alone metrical! This effect is compounded by the use of a version of *jhūmrā*'s *ṭhekā* which has no stroke on *mātrās* 2 or 9<sup>20</sup> (the strokes are displaced to the half way points in these *mātrās*), giving a pulse which is in any case irregular with a maximum time span between *tablā* strokes of ~7 sec. (This recording is remarkable in other ways however, as will be shown below, see fig 3.15).

Thus rates of 30 MM, maybe as low as 20 MM, are perceivable as consistent pulses. At the other end of the scale lies *atī-drut lay* (very fast tempo): some instrumental *tintāl* performances go well over 600 MM in the concluding *jhālā* sections. Yet there is a straightforward case to be made for considering the metric structure of such pieces as a 4 'beat' cycle, where each beat or pulse is located on the *vibhāg* divisions (see fig 3.5 above). The *mātrā* rate itself is not metrically significant, but is best understood as a surface rhythm level at a *lay* ratio of 4:1 against the (*vibhāg*) pulse rate. This would give an effective pulse rate of at most 730/4, ie 182 MM (time-span approx 0.33sec). This pulse

<sup>18</sup>Pandit Jasraj: Rag Miyan-ki-Todi, *khyāl* in *vilambit ektāl* [Swarashree PJ0001]

<sup>19</sup>Amcer Khan: Rag Marwa, *khyāl* in *vilambit jhūmrā tāl* [EMI EALP1253]

<sup>20</sup>*jhūmrā tāl*: 14 *mātrās*, 3+4+3+4

X	2	O	3	X
dhā -dhā tirakita	dhin dhin dhāge tirakita	tin -tā tirakita	dhin dhin dhāge tirakita	dhā

level is close to the maximum possible before consistent grouping necessarily comes into effect. This maximum would be, by my subjective estimate, between 180-210 MM (time-spans = 0.28-0.33sec).

If pulse rates in Hindustānī music vary, as this suggests, between approximately 20 and 200MM, covering the range from very slow to very fast, this still suggests a wide range of performance tempi, according to previous estimates. Sachs suggests a maximum tempo range of 32-132 MM [1953:33]. This may be reasonable for many music cultures, yet I believe that factors peculiar to North Indian music make a wider range of tempi practicable: in particular the use of familiar metric structures which may be manipulated for use over a wide range of tempi.

The following table collects the data cited in fig 3.8, and presents it in three rough tempo bands- *vilambit*, *madhya* and *drut* lays. Anything more precise, or involving the possible seven bands cited in fig 3.1, would overestimate the consistency with which these terms are used.<sup>21</sup> Tempi in instrumental music are in most cases significantly higher than those in vocal music, and their ranges are consequently given separately.

	<b>vilambit lay</b>	<b>madhya lay</b>	<b>drut lay</b>
<b>vocal genres</b>	10.6-60	40-175	170-500
<b>instrumental genres</b>	32-105	85-180	230-730

fig 3.9: Tempo (*mātrā* rate) ranges for Hindustānī vocal and instrumental music (MM), based on the measurements collated in fig 3.8 above.

### Rhythmic density

Rhythmic density figures, as indicated above, are also to be considered; maximum rhythmic densities (figures which treat gaps as rhythmic events, rather than averaging out the density of only the articulated notes or syllables), are useful in medium and fast tempo syllabic music, in which the relationship between surface rhythm and *tāl* is clear. Maximum rhythmic density figures may be worked out as follows;

$\text{highest lay ratio sustained} \times \text{tempo} = \text{maximum rhythmic density (bols/min)}$
---

<sup>21</sup>See however Stewart [1974:81].

In the fastest instrumental music, these figures reach levels of 600-700 *bols*/min; although they are somewhat lower in vocal music, rarely over 400 *bols*/min<sup>22</sup>, due to a lower physical limit on the speed of articulation. For the earlier stages of performances, where rhythmic densities are lower and *lay* ratios not clearly established, average rhythmic densities may be calculated, using either of the following formulae;

$$\begin{aligned} \text{no. of } \textit{bols} \text{ in cycle} \times 60 \div \text{length of cycle} &= \text{ave. rhythmic density (} \textit{bols/min} \text{)} \\ \text{no. of } \textit{bols} \times \text{tempo (MM)} \div \text{no. of } \textit{mātrās} &= \text{ave. rhythmic density (} \textit{bols/min} \text{)} \end{aligned}$$

### Cycle length

As was suggested above (3.2.1), the development of both extremely fast and very slow tempi has had a greater effect on the *cycle lengths*<sub>(ie. durations)</sub> than on the perceived metric tempi. Cycle lengths vary from around 1.5sec in *ati-drut tīntāl* to over 65sec in *ati-vilambit jhūmrā* and *ektāl*. The latter case has a significant effect on rhythmic organisation, since cycles of over 65 seconds are- according to psychological research- far too long to be perceived as single entities or Gestalts.

The limit for a time-span perceivable as a single unit is said to be about 12 seconds<sup>23</sup>; we should make allowance for the fact that *tāls* are known metric structures, so that we cannot exclude the possibility that by means of an intellectual reconstruction on the part of the listener, cycles somewhat over this 12 second limit may still be perceived as single units. But 65 seconds? Surely not: this factor above all explains why very slow *tāls* are perceived to be lacking in metric character<sup>24</sup>, and limits the practical importance of cyclicity (2.4.2).

At the other end of the scale, compositions in medium and fast tempi often consist of two indivisible *āvart*-length lines per section. This begs the question of whether there may be metrically significant levels below the *āvart*.<sup>25</sup> There is indeed a possibility of 2-

<sup>22</sup>The fastest in these examples is approx. 640 *bols*/min, briefly achieved in a *dhamār* performance by Vidur Malik; this is however exceptional.

<sup>23</sup>Dürr and Gerstenberg report that "Modern psychologists have suggested 12 seconds as the longest span of time which can be distinctly perceived as a single unit" [1980: 805]. Dowling and Harwood write of "a psychological present normally lying in the 2-5 sec range but occasionally stretching out to 10 or 12 sec". They do allow however that "The length of the psychological present varies with context and can be manipulated by composers and performers in particular contexts within stylistic limits" [1986:181].

<sup>24</sup>See *chand*, 1.4.4.

<sup>25</sup>This is the implication of Stewart's argument that since all *rūpak tāl* compositions consist of multiples of 2 cycles, the *tāl* functions not as a 7 *mātrā* cycle, but as a symmetrical 14 *mātrā* structure [1974:396].

*āvart* spans functioning as metric units, although as the organisation would not apply beyond the statement of the composition, this is a localised phenomenon.<sup>26</sup>

### 3.2.3: Variation of tempo in performance

Hindustānī music shows a wide variety of practices as regards the variation of tempo in the course of performances; a much greater variety in fact than is generally assumed. Stewart appreciated that rather than maintaining a constant tempo (for the *tāl* or metrical structure, with only the rhythmic density accelerating), which was previously assumed to be the ideal, many genres had come to embrace the concept of acceleration in performance [1974:396-8]. Slawek too touched the issue, with reference to Ravi Shankar's *sitār* performances [1987:196-7, 209-12].<sup>27</sup>

The present research, however, has revealed a tremendous diversity of performance patterns embracing constancy of tempo, gradual and stepwise acceleration, very occasionally deceleration, and combinations of the above. Many changes in tempo are conscious and deliberate, some almost certainly unconscious; inevitably accidents and errors also play their part. Some features are characteristic of genre, some of *gharānā* or style group, others show a high degree of individuality. The basic findings of this research are illustrated below with some examples.<sup>28</sup>

1. Constancy of tempo, although not as common as often assumed, does nevertheless occur. It is most likely to be a feature of entire performances of *vilambit khyāl* or *thumrī* (excluding *laggī* sections), while stable tempi are maintained for significant stretches of instrumental *vilambit*- or *madhya lay gats*. It is most rare in *dhrupad-dhamār*, perhaps surprisingly since these genres are considered representative, to a considerable degree, of an earlier stage in the development of Hindustānī music.<sup>29</sup> The lack of constant tempo in *dhrupad* in practice is due to the high degree of interaction between soloist and drummer, which seems to inevitably create a tendency to accelerate. In *khyāl*, by way of contrast, there is much less interaction, and consequently the stability of tempo is almost entirely the responsibility of the *tabla* accompanist.

<sup>26</sup>See also 7.3.2.

<sup>27</sup>See also Manuel [1989].

<sup>28</sup>Illustrations of variation in rhythmic density are found in chs 5, 7 & 8.

<sup>29</sup>Cf. syllabic style, 1.4.2.

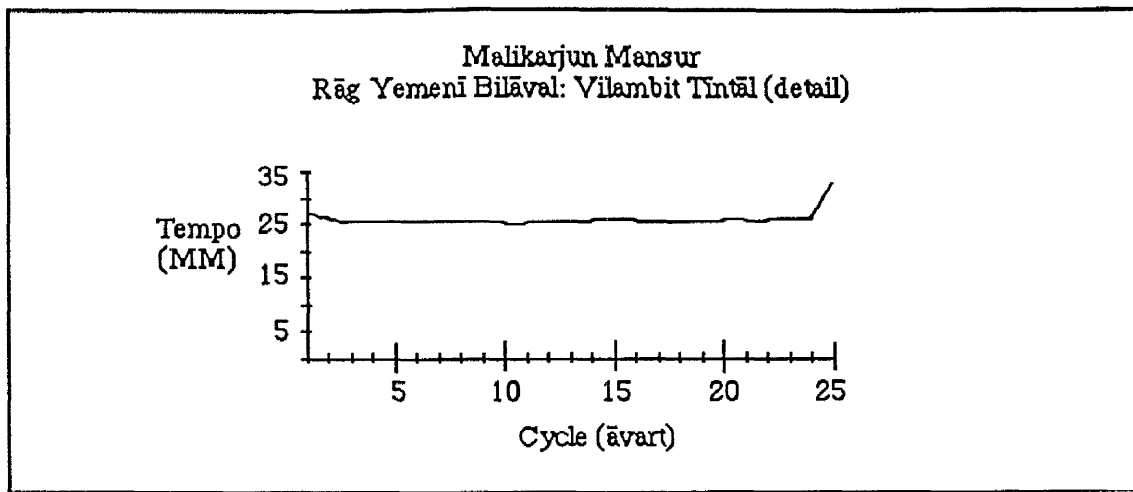


fig 3.10: Detail of tempo chart from a *vilambit khyāl* performance, showing almost constant tempo from cycle 3 to c. 24.<sup>30</sup>

2. **Acceleration** can be interpreted in the following categories;

a) Gradual and slight, and perhaps unintentional, as below.

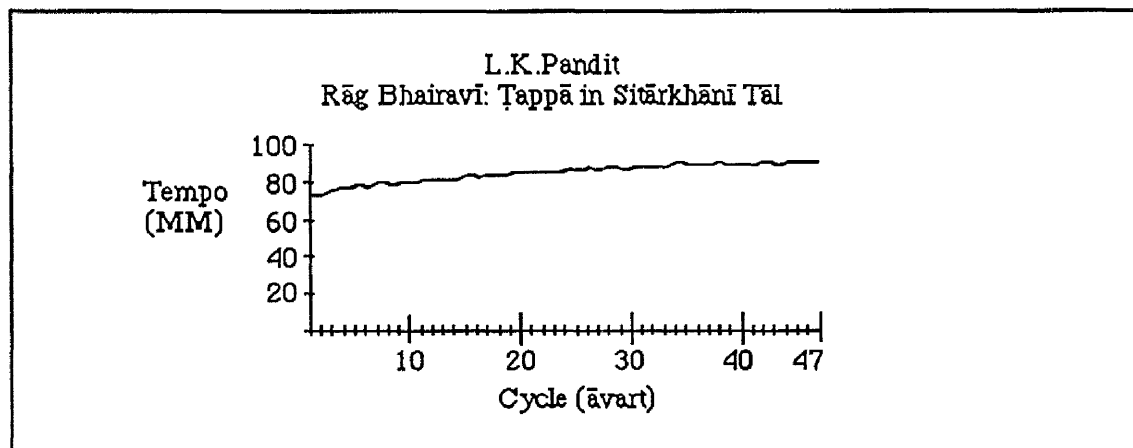


fig 3.11: Tempo chart of a *ṭappā* performance, showing gradual acceleration (76-91 MM, approx. 20%).

b) Gradual but significant; with the function of creating tension and excitement.

This is the norm in *dhrupad-dhamār*, and in instrumental *madhya lay-* and *drut gats*.

<sup>30</sup>A feature of *tintāl khyāls* of Malikarjun Mansur, and other Jaipur *gharānā* singers, is an acceleration from *vilambit* to *madhya lay* (in this case, from 26MM at cycle 24 to 33MM, and then to 53MM by cycle 34). The tempo remains constant up to this point (c.24) however.

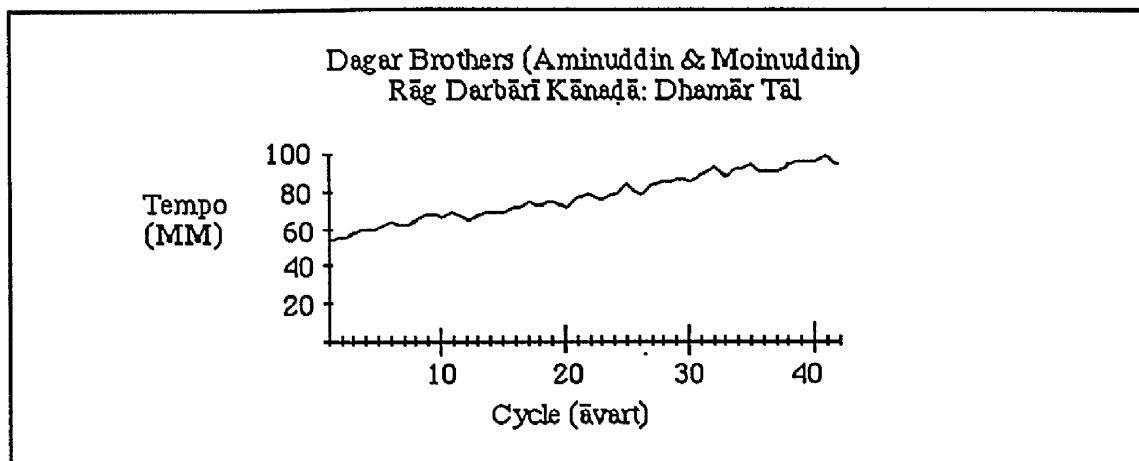


fig 3.12: Tempo chart of a *dhamār* performance, showing a gradual but significant acceleration (54-96 MM, ie. 77%).

c) Stepwise; a conscious acceleration at a particular point in the performance, for example in *khyāl* or instrumental *gat* if a faster tempo is required for *tāns* than for *vistār*. In some cases this involves tempo as much as doubling, a characteristic of *khyāls* in *vilambit lay* (especially *tīntāl*) which effectively thus move up to *madhya lay*.<sup>31</sup>

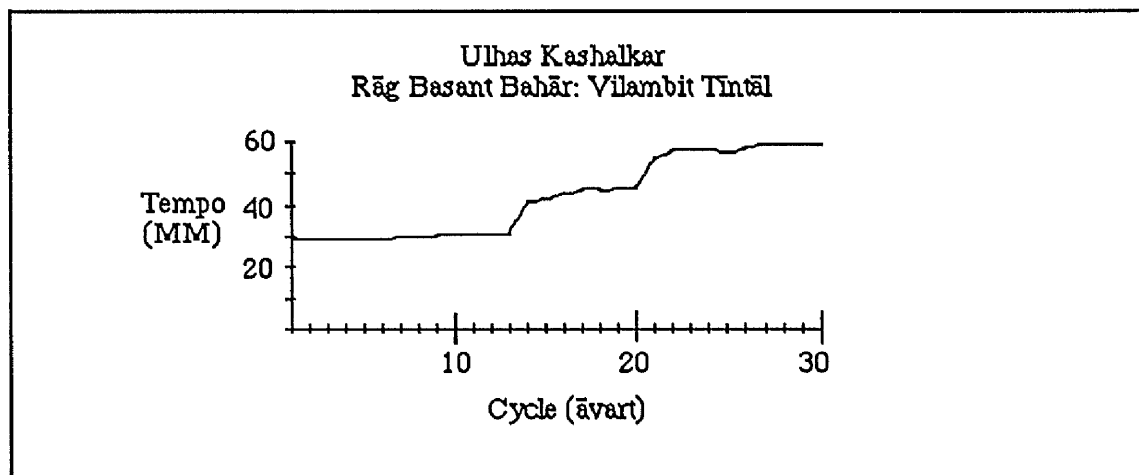


fig 3.13: Tempo chart of a *barā khyāl* performance in *tīntāl*, showing two clear stepped increases in tempo (31-41 MM and 45-55 MM, 32% and 22% respectively).

d) Temporary; for example to accommodate a *tablā* solo;

<sup>31</sup>The most celebrated example of stepwise acceleration is the change to the *laggī* section in *thumrī*, which also generally involves a change of *tāl*. See Manuel [1989:118-121].



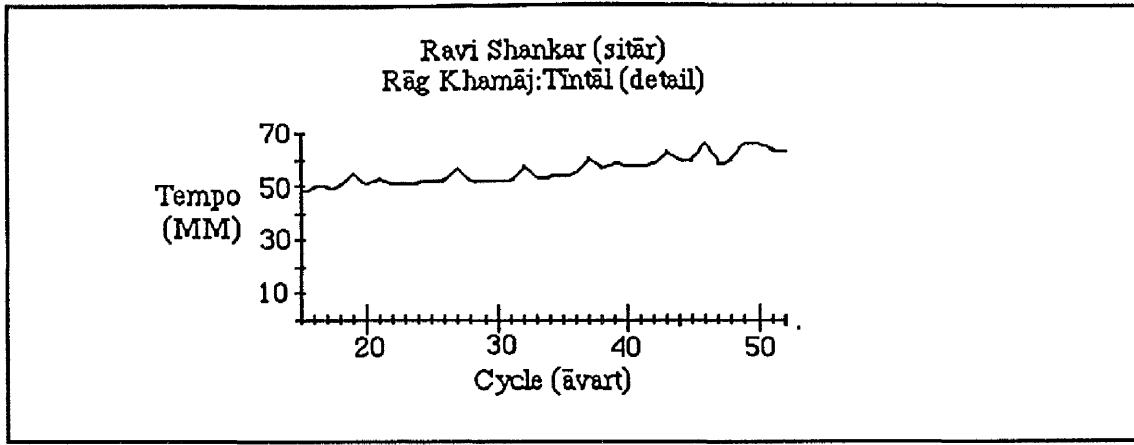


fig 3.14: Tempo chart from a *vilambit gat* performance on *sitār*; the peaks mark *tablā* solos, while the underlying trend is of only slight acceleration.

3. **Deceleration** is almost unknown, and may usually be interpreted as one of the following;

- a) Winding down at the end of a performance,
- b) A return to the desired tempo after a temporary acceleration; for example, after a *tablā* solo (see above, fig 3.14).
- c) Adjustment between statement of a *khyāl bandīś* and the *vistār* phase; many singers apparently find that the *vistār* (melodic development) requires a slower tempo than that necessary for the composition (see fig 3.10, c. 1-3).
- d) Accidental or in error.
- e) One special case deserves a mention however, Amir Khan's recording of *rāg mārāvā* in *jhūmrā tāl*. I have described above the remarkably slow tempo and absence of constant pulse or metrical character: another feature, is that the performance decelerates considerably before reaching a plateau at around 13 MM.

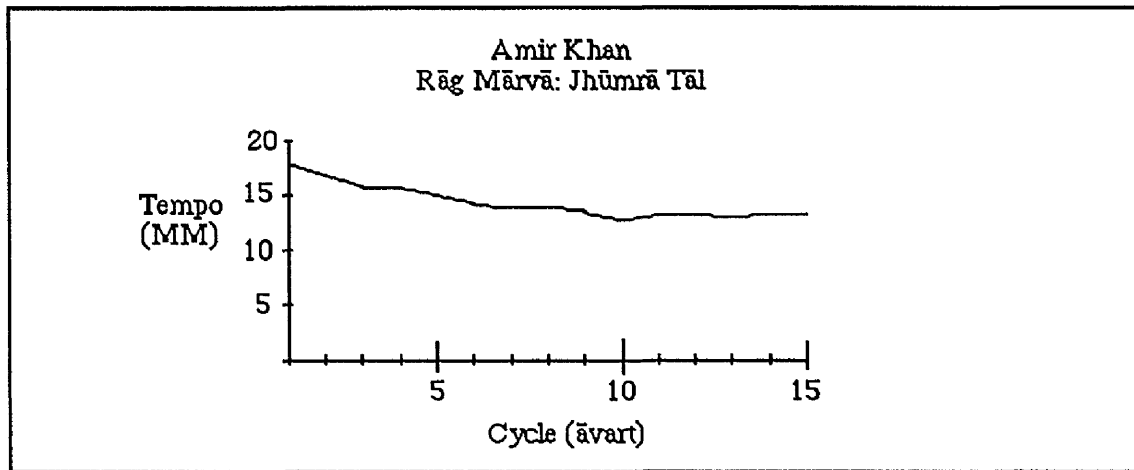


fig 3.15: Tempo chart of a *baṛā khyāl* performance by Amir Khan, showing significant deceleration.

This remarkable fact reaffirms that *tāl* structures show radically different characteristics- in this case deceleration- when a metric tempo of below about 20MM is used without consistent subdivision of the *mātrā* pulse. It also illustrates a more general point, that when musical structures are altered, changes in any one parameter (in this case tempo) cause knock-on effects in other parameters.

4. **Fluctuation**; some performances display a considerable fluctuation in tempo, disproportionate to any overall acceleration. This seems to be a phenomenon most common either where performances go through a great number of stages, each with an attendant increase or decrease in tempo, or with some medium tempo performances, where the *ṭhekā* is performed with a high degree of pitch modulation on the *bāyā* “ge” stroke. In the latter case I hypothesise that in performances where the character of the *ṭhekā* is largely determined by the prominent manipulation of the *bāyā*, this limits the possible tempo range because not only would the character of the *tāl* be lost at too fast a tempo, there may also be a physical limit on the speed at which the variation of pressure on the *bāyā* head may be comfortably effected. This effective limit on tempo may thus cause attempted accelerations to be reversed.

In the example illustrated below, the underlying trend is of slight acceleration, yet this is obscured by considerable fluctuation. The *tablā* accompaniment features particularly prominent modulation of the *bāyā* pitch.

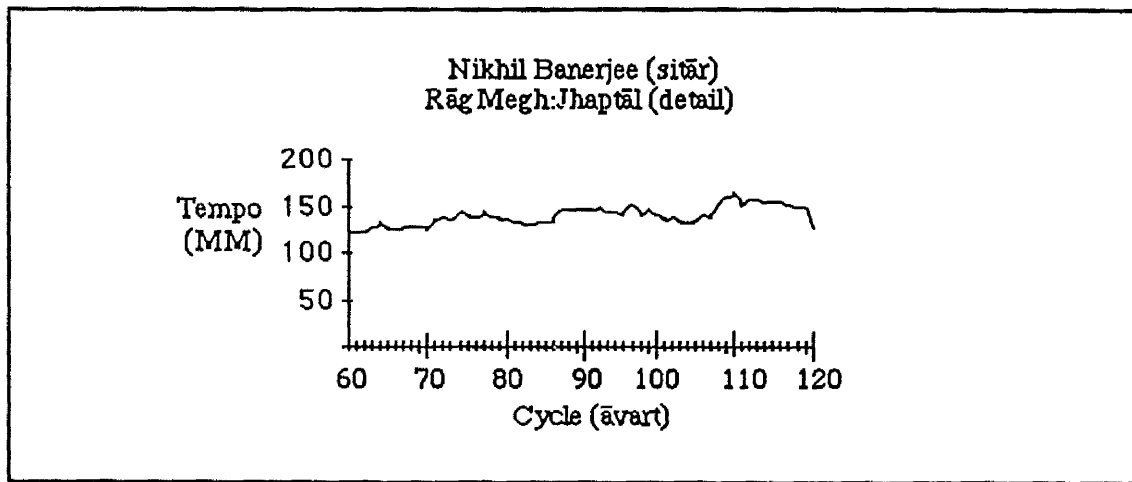


fig 3.16: Detail of tempo chart of a *sitār* performance in *madhya lay jhaptāl*.

### 3.3: Summary

The work outlined above will help to clarify the concepts of *lay* and tempo in Hindustānī music, besides replacing assumption and misunderstanding with some empirically based observations. The following points may be usefully restated;

1. **Tempo** in Hindustānī music is usually understood as the rate of succession of the metric structure, the *tāl*, expressed as the *mātrā* rate. The Indian term **lay** refers either to “tempo” in this sense, to rhythmic density or to the ratio between rhythmic density and tempo (*lay* ratio).

2. **Mātrā rate** is not the only useful measure of tempo however, because the extension of the tempo range at both ends has caused the function of *tāls* to be modified at both very slow and very fast tempi. In these cases some other metric pulse level may be a more significant measure of tempo than *mātrā* rate. The range of *mātrā* rates in Hindustānī music is at least 11-730 MM, that of effective tempo about 20-200 MM.

3. **Rhythmic density** is another important indicator of tempo, to be considered alongside pulse rate. In fact, the ratio between these two rates is often highly significant (see 1, above). The maximum rhythmic density possible in instrumental music is at least

730 *bols/min*<sup>32</sup>, but is somewhat less in vocal music (usually around 400 *bols/min*, but very occasionally 600 *bols/min* or higher).

4. *Lay*- both tempi (*mātrā* rates) and rhythmic density- tend to be faster in instrumental than in vocal music.

5. Tempi (*mātrā* rates) show a wide variety of patterns in performance embracing constancy, gradual and stepwise acceleration, and in special circumstances deceleration.

These findings illustrate that there is considerably more diversity in Hindustānī rhythm than could possibly be imagined from the conventional *tāl* theory. This diversity is clearly evident in measurements of tempo and surface rhythmic density rates, in patterns of tempo variation and in the functioning of metric structures, as demonstrated above: it is also true of almost every other variable of rhythmic structure and organisation in Hindustānī music.

More specifically, they supply empirical confirmation of several points made in the theoretical exposition of chapter 1. The extremely wide range of *mātrā* rates demonstrates that the 'ideal' syllabic model of metric organisation outlined in 1.4.2 has been considerably modified in many genres; in many cases the *mātrā* cannot function as the primary pulse rate (or 'tactus'), due to inescapable psychological factors. The same modifications in rhythmic organisation are suggested by the ambiguity of the concept of *lay*, which reflects the fact that the conceptual structure of which it originally formed an integral part has been dramatically altered.

The importance of drum use and accompaniment style is confirmed by the difference between fig 3.10 (constant tempo, made possible by *tablā thekā* accompaniment); fig 3.12 (acceleration of tempo due to interactive *pakhāvaj* accompaniment), and fig 3.16 (fluctuation in tempo, where a high degree of *bāyā* pitch modulation is employed in the *thekā*). The interdependence of the various rhythmic parameters is clear; measurements of *lay* can therefore provide empirical data in support of studies of other rhythmic factors, as is demonstrated above.

<sup>32</sup>Considerably higher levels (c. 1400 *bols/min*) may be reached in a *santūr* performance, since both hands may be used to strike the instrument alternately. See fig 5.16.



## Chapter 4: Performance practice and surface rhythm in Hindustānī music

Previous chapters have described the basic parameters of rhythmic organisation in Hindustānī music- the *tāl* system and the concept of *lay*, and their implications for metric structure, tempo and rhythmic density. We have seen that North Indian musical rhythm has an explicitly dual structure, and chapters 1 to 3 have explored one half of that structure- the metrical framework. We must now consider the surface rhythm which overlays that framework.

### 4.1: Introduction

Chapter 5 will deal with techniques of rhythmic variation (*laykāri*) per se: the present chapter looks at the ways in which surface rhythm is generated in North Indian music. This necessitates, in the first instance, clarification of performance practice in this tradition; the formal, technical and aesthetic factors influencing the music, and their rhythmic implications.<sup>1</sup> This will enable rhythmic variation (*laykāri*) to be seen in a meaningful context of rhythmic organisation and performance process.

Performance processes and techniques must be studied with regard both to the local level rhythmic patterns which they generate, and to rhythmic organisation in the wider sense. In general, rhythmic analysis implies a search for musical meaning in rhythm: it follows that rhythmic analysis is inseparable from the study of performance practice. In a large proportion of Indian music, surface rhythm is generated by the application of certain idiomatic processes or techniques of development, in extemporised performance. Rhythm is generated at a local level without regard to a detailed plan of formal structure, although shaped by a sense of progression. Any formal scheme which may be identified by an observer, implies not an overall structural plan, but only general tendencies of organisation and process- typically of episodically organised development, and of increasing rhythmic density.

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<sup>1</sup>Béhague writes that "To isolate the sound contents of a performance and call such an operation "Performance Practice" is no longer justifiable" [1984:7]. In a technical study of an art music tradition such as this however, "sound contents", while never entirely separable from performance context, must clearly remain the main focus.

The study at this stage will be quite general: there are too many variables in North Indian music - formal, technical and stylistic - to allow a comprehensive study of all rhythmic features of all genres, forms and styles. An attempt at such a comprehensive presentation would only detract from the more fundamental ideas of process and organisation which are developed in this thesis.

A general analysis of the principal rhythmic and formal parameters of North Indian music however is approachable, if it is based on the ideas or assumptions which all genres and styles of Hindustānī music share. These assumptions include the clear ordering of performance as “fixed composition + development”, the episodic organisation of that development, and the general tendency to increase *lay* (tempo and/or rhythmic density). With reference to the factors of rhythmic organisation introduced above, and to issues which may be identified as particularly important rhythmically (such as text use and distribution, and preference for syllabic or melismatic rhythmic styles), it is possible to build up an analytical approach to surface rhythm which may be applied to all the classical genres and styles of North Indian music.

The principal aims of this chapter are therefore to;

- Discuss performance practice in general terms (4.2).
- Discuss the place and importance of the fixed composition (*bandiś* or *gat*), and its structural parameters (4.3).
- Discuss processes and techniques of development in performance (4.4).

This will be done in the light of the theoretical work of previous chapters on rhythmic organisation and style, and the findings will in turn contribute to that theoretical framework.

## 4.2: Process and formal organisation in performance practice

It is important to consider performance practice in North Indian music at this point in the study, for two reasons. Firstly, the formal organisation we may identify in any performance (such as that suggested by the synchronic perspective of transcription) is generated by the sum total of the local performance processes employed at each point in that performance, as

much as it is shaped by larger scale organisation or progression. Secondly, since surface rhythm is generated by means of idiomatic techniques and processes employed in performance, it may profitably be analysed in their context. In effect, both the large-scale structure and local surface rhythm are generated largely by the processes and techniques of performance practice; and moreover, *laykāri* (including rhythmic variation *per se*) is dependent on this context.

#### 4.2.1: Elements of performance and their organisation

In any musical performance a number of basic elements may be identified, within whose context local processes and techniques are carried out. Any performance of Hindustānī music may be said to contain any or all of the following three primary elements, combined in a number of ways.

- Development of the *rāg* (*ālāp*, *ālapti*, *barhat*, *vistār* and *joṛ*).<sup>2</sup>
- A fixed composition, synthesising *rāg*, *tāl* and text or instrumental stroke patterns; (*bandiś*, *cīz*, *gat*).
- Improvised development; either specifically focussed on use of the *bandiś* text, or more generally rhythmic variation based on the *rāg* and set within the *tāl* (*upaj*, *bol bāñṭ*, *bol banāo*, *toḍā*, *tān*, *laykāri* etc.).<sup>3</sup>

The following schemes illustrate three of the many possible methods of combining these primary elements. 'A' represents the most common pattern of *dhrupad* performance (some *khyāl* styles too follow this plan); 'B' gives the most common *vilambit khyāl* scheme, and 'C' similarly for *thumrī*. There are many other possible variants and combinations, but these examples introduce the most common schemes.

<sup>2</sup>*Ālāp* (lit: introduction) refers to the exposition of the *rāg*, either in metered or more usually in unmetered music. *Barhat* (lit: increase, extension) and *vistār* (lit: spread) usually refer to this process within *nibaddh* sections; *joṛ* (lit: addition, joint) is the extension of the unmetered *ālāp* in which a consistent pulse is felt.

<sup>3</sup>*Upaj* (lit: produce, product) is a term for post-*bandiś* development, used especially for *dhrupad*. The other terms are explained in the text below.



	<b>anibaddh (no tāl)</b>	<b>nibaddh (tāl bound)</b>	
<b>A</b>	<i>ālāp, jor</i> (non-metric <i>rāg</i> development)	<i>bandiś</i> (fixed composition)	<i>bol bāñṭ</i> (rhythmic development of <i>bandiś</i> text)
<b>B</b>	(none)	<i>bandiś</i>	<i>vistār</i> (quasi-free rhythmic <i>rāg</i> development, with and without words) and <i>tāns</i> (fast runs or flourishes)
<b>C</b>	(none)	<i>bandiś</i>	<i>bol banāo</i> (melismatic ornamentation of <i>bandiś</i> text)

fig 4.1: Three possible schemes for the organisation of performance in North Indian classical music.

Thus in 'A', *rāg* development, the *bandiś*, and textual/rhythmic development follow each other in sequence. In 'B' the exposition of the *rāg* follows the *bandiś*, and may merge with more rhythmic forms of development. In 'C' the *rāg* is not developed methodically, but melodic possibilities are explored in the context of expressive development of the text.

These primary elements (*rāg* development, *bandiś*, rhythmic development) may thus be combined in different ways. A simple progression, '*rāg* development- *bandiś*-rhythmic development', may apply only to certain genres (in particular, *dhruṇpad* and *dhruṇpad*-based instrumental forms). The incorporation of *rāg* development into the post-*bandiś* development phase makes analysis of performance practice in other genres (especially *vilambit khyāl*) more complicated.

A concentration on *rāg* development may override both rhythmic and textual factors (as in some *vilambit khyāl vistār*); but other forms of melodic development occur in the ornamental melismatic flourishes of *bol banāo* (particularly in *ṭhumrī*), or in the context of fast and rhythmically exciting *tāns* (in *khyāl* and instrumental *gat* forms). In *bol bāñṭ*, text is broken up into semantic chunks, which are sung in different rhythmic combinations to melodic material already developed; in this case the emphasis lies on rhythmic-cum-textual development.

The *bandiś* is the key to the *nibaddh* section (with which this thesis is concerned). This fixed composition is generally stated as soon as the *tāl* is introduced, and part of it is

subsequently used as a refrain after episodes of improvised development; furthermore the development frequently employs material introduced in the *bandīś*. Whatever follows the *bandīś*, in what may be termed the “development phase”, must be seen in the context of the concerns of the music tradition as a whole- *rāg* development, rhythmic development and textual development (or *bol* variation in instrumental music).

What makes analysis of development phases difficult is that in practice, techniques and processes are not always clearly distinguished. Techniques are often not clearly defined, nor are they always separated in performance, especially in the stylistically eclectic genre of *khyāl*. Moreover, each *gharānā* or individual style has distinct development techniques, as well as often unique ways of describing them. The terms employed by one musician may adequately describe his own music, but remain inappropriate for that of another artist. The tradition as a whole is in fact sufficiently heterogeneous, that extreme care needs to be taken in applying any terms universally.

It is certainly possible to define a limited number of development techniques of importance in Hindustānī music (*bol bāñṭ*, *bol banāo*, *tān* etc.),<sup>4</sup> but in truth the stylistic diversity ensures that however they are defined, much music will defy categorisation. In any North Indian music, a number of basic processes may continue simultaneously- such as *rāg* development, acceleration and text manipulation. These different processes may come together in particular definable combinations in particular contexts, but the mix of elements is immensely variable. What this study will do is to identify certain important parameters by which the music of any genre or style may be characterised in rhythmic analysis.

#### **Development techniques and their resolution into rhythmic parameters**

By resolving any improvised development into a number of rhythmic parameters, we may avoid much terminological confusion. In terms of development technique (and before considering rhythm as such), the principal variables will be as follows;

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<sup>4</sup>See later, and 4.4.2.

- Articulation: singers may use text; *ākār* (or other vowels); or a variety of other syllables such as *sargam*, *nom-tom* and *tarānā*.<sup>5</sup>

- Text syllable (or instrumental stroke) use: the use of the text in development may involve either division and recombination of text; expression of text using ornamentation; or use of text-syllables as a vehicle for *rāg* development.

In instrumental *gat* forms, strokes may be used in a number of ways, involving mainly either the imitation of any of the techniques of text use, or division and recombination according to the logic of *tāl* structure, melodic pattern or *laykārī*.

- *Rāg*: treatment may focus on repetition or embellishment of previously developed material, the introduction of new material, or the expansion of melodic range.

Moving into the specifically rhythmic domain, the basic parameters are;

- *Tāl* (see ch 2); and *lay* (see ch. 3).
- Rhythmic style, syllabic or melismatic, and the mode of rhythmic organisation (see ch. 1).
- *Laykārī*; use of rhythmic variation techniques (see ch. 5).

These then are some of the most important factors which may be identified in post-*bandīś* development. Certain logical combinations of these parameters are frequently observed. For instance, *dhrupad bol bāñṭ* may be described as a synthesis of (1) articulation using text only, (2) development of that text by division and recombination (*bol bāñṭ*), (3) repetition of previously developed melodic material, (4) the use of one of several *tāls*, typically *cautāl*, (5) medium to fast tempo, (6) syllabic rhythmic style, with a high degree of correlation between surface rhythm and *tāl* (ie. a syllabic or quantitative rhythmic organisation), and (7) the use of various idiomatic *laykārī* techniques.

In this case, the type of development is defined by the use of the text (*bol bāñṭ* = 'distribution of the words'), but thanks to a considerable homogeneity within the genre, associations of *lay*, rhythmic style and so on are assumed. The rhythmic parameters listed above are all more or less logically determined, in that they either establish a suitable environment for this type of text-based development process (eg. the tempo), or are

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<sup>5</sup>*Ākār* is the use of the vowel 'ā'; *sargam* are solfège syllables (Sa, Re, Ga, Ma, Pa, Dha, Ni); *nom-tom* are particular syllables used in *ālāp* (tā, nā, re, num etc.); *tarānā* is a vocal genre using particular meaningless syllables (tā, dere, dim, nā etc.).

dependent on that process (the syllabic rhythmic style, and use of idiomatic *laykārī* techniques).

Several other techniques or processes are similarly defined- by text use in particular- such as *bol banāo*<sup>6</sup>, *bol ālāp* (introduction to the *rāg*, sung to the text syllables), or *nom-tom ālāp* (ditto, sung to 'nom-tom' syllables). Other types of development are defined by their rhythmic aspect, for example *tān* (fast, virtuosic run<sup>7</sup>). In each of these cases, association with other parameters is less fixed than in the case of *dhrupad bol bāṇṭ*, and one finds considerable overlaps between the surface rhythm produced by different types of development technique.

In order to better organise the theoretical exposition, development will be divided in the first instance, into two general classes, 'rāg-oriented' and 'rhythm- and/or text-oriented'. This division is appropriate since the two categories of development are often distinguished in Indian classical music culture; however the incorporation of *rāg* development into *nibaddh* sections (in *khyāl* in particular) does complicate the analysis. 'Rāg development' will cover *ālāp* within *nibaddh* sections, and the 'rhythm- and/or text-oriented development' the more syllabic, text- or stroke-based development in which *laykārī* may find a place. Although the division is in some cases arbitrary, it is nevertheless useful in separating out arhythmic, textless and melismatic *ālāp* from other categories of extemporised development.

The more detailed discussion of development techniques follows that on the *bandīś* and, first of all, comment on some important performance processes and on the importance of accompaniment style.

#### 4.2.2: Performance processes: episodic organisation of development

Having established a basic framework within which to view different types of development techniques, and identified a number of key parameters for rhythmic analysis, we must consider other common ideas of Indian music's performance process. One such shared assumption is of the episodic organisation of performance. In virtually all North Indian music, all or part of the fixed composition is used as a refrain, between passages of

<sup>6</sup>See later, 4.4.2.

<sup>7</sup>Probably from *tānnā*, 'to stretch, to spread' [Chaturvedi and Tiwari 1986:285].

improvised development. In some genres, especially instrumental *gats*, these refrains accompany percussion solos.

Thus the statement of the *bandiś* is followed by an episode of improvised development, then a refrain comprising part of the *bandiś*, then more development, the refrain again and so on<sup>8</sup>; this is true regardless of the genre, style or type of development employed. This structure may be illustrated schematically as follows;

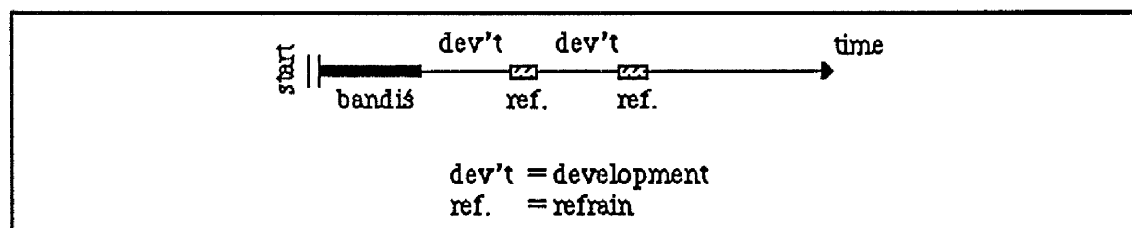


fig 4.2: An illustration of the episodic organisation of Hindustānī music performance.

This episodic structure is a key concept in the rhythmic organisation of North Indian music; it is associated with the extemporary nature of the performance process, and is a constant factor, no matter how various the contents of development episodes may be.

### Acceleration

Another assumption, common to most North Indian music, is of a tendency to increase the *lay*. If episodic organisation is the key to local level structure, then acceleration is the factor which creates a sense of progression in the performance as a whole. This acceleration may occur in the metric tempo, rhythmic density or both (see chs. 3 & 5).<sup>9</sup> Acceleration is the key to one of the principal processes in Indian music; the transition from unmetered or loosely-metered, melismatic and slow tempo melodic development to metered, syllabic and fast tempo rhythmic development.<sup>10</sup>

The various development techniques used in North Indian music are naturally ordered by this general rule of increasing *lay*.<sup>11</sup> Thus *ālāp* will generally precede *bol bāñṭ*, which will precede *tāns*. Issues of technique and style, as well as those of structure and

<sup>8</sup>What I have termed “episodes (of improvised development)” and “refrains”, Wade refers to as “events” between “demarcation points” [1984b:40-41].

<sup>9</sup>This tendency reaffirms the primacy of process over structure in Indian music: otherwise, we might expect a balance between acceleration and deceleration, and between increase and decrease in dynamic level, as in Western art music.

<sup>10</sup>Cf Wade’s “multifaceted progression” [1984b:41]. She raises several of the issues discussed in this chapter; episodic organisation (although she uses different terms for the same concept), progression (including acceleration) and the variety of development techniques (and the interrelationships of these factors).

<sup>11</sup>Occasional decelerations are observed, but the overwhelming tendency is of acceleration (cf. 3.2.3).

form, are thus inseparable from those of process: performance process is the key to understanding large-scale structure, as it is to understanding local level rhythm.

These ideas- of the place of the *bandiś*, the use of various development techniques (and the possibility of resolving them into rhythmic parameters), episodic structure and acceleration- are illustrated below in formal schemes from actual performances in two different genres of North Indian music. The first is taken from a *dhrupad* performance, the second a *khyāl*; they illustrate the stage of performance, episodic structure, *lay* ratio and tempo (and hence acceleration).

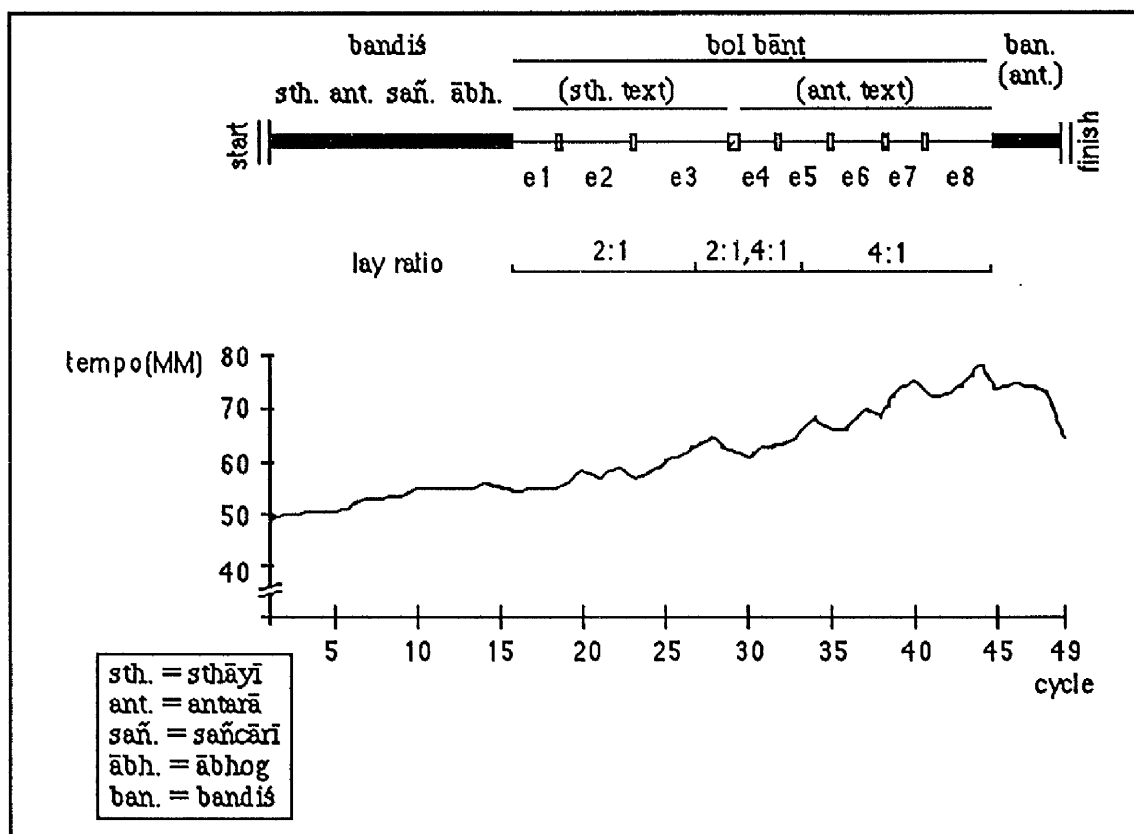


fig 4.3: The formal scheme of a *dhrupad* performance by the Dagar Brothers, of *rāg jaijaivantī* in *cautāl*.

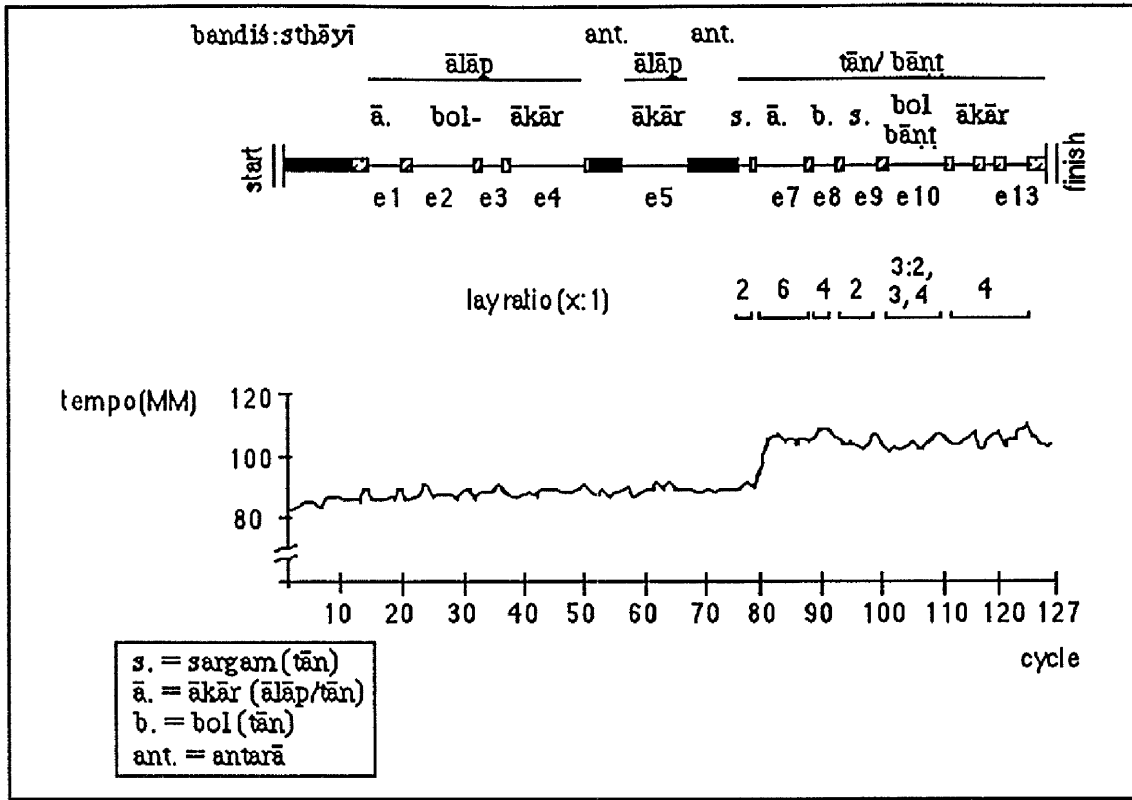


fig 4.4: The formal scheme of a *khyāl* performance by Veena Sahasrabuddhe, of *rāg śrī* in *rūpak tāl*.

Although these two performances differ in many respects, the key concepts outlined above- the ‘*bandiś* + development’ pattern, episodic structure and acceleration- are illustrated clearly in both cases. The *dhrupad* (fig 4.3) is more simply organised, since only one development technique is employed in the metered section. This *bol bāñt* is based first on the text of the *bandiś sthāyī* and then on that of the *antarā*. The *khyāl* (fig 4.4) features first *rāg*- development (*ākār*- and *bol- ālāp*), then various types of rhythmic and textual development (*bol bāñt*, *sargam*-, *ākār*- and *bol tāns*).

This section has introduced key concepts in Hindustānī music’s performance practice. Before moving on to discuss the *bandiś* and various development techniques in more detail, we must note a number of points regarding the percussion accompaniment.

#### 4.2.3: The percussion accompaniment

All *nibaddh* music is accompanied by drums- *dhrupad*, *dhamār* and *sādrā* by the barrel drum *pakhāvaj*, and all other genres by the drum set *tablā*; this fact must play a part in the development of our theoretical model of rhythmic structure. North Indian music’s explicitly

dual structure has been noted above. The percussion accompaniment plays a crucial role in the rhythmic organisation of modern North Indian music, in that it can articulate the metrical framework which forms one level of this structure.<sup>12</sup>

The drum accompaniment is then an essential element of rhythmic organisation in *nibaddh* forms; it may also influence surface rhythm, and must therefore be taken into consideration in several contexts. There are a number of methods of accompaniment however, and the mode of accompaniment may have an important influence on the rhythmic patterns produced by the soloist. The principal modes of accompaniment are the following;

- Accompaniment by *ṭhekā*: the drummer plays a version of the *tāl*'s *ṭhekā* (ie. a pattern similar to those listed in 2.1, but elaborated to varying degrees depending largely on the tempo), and does so with little or no variation between cycles. In this case the soloist may rely on the drummer for audible cues to keep him in time; at medium and fast tempi the use of a repeated *ṭhekā* enhances the qualitative aspect of the *tāl* structure, and the *ṭhekā*'s accentual pattern may influence surface rhythm.

This type of accompaniment is the most common for *khyāl* and *ṭhumrī* performance, but may be heard at some point in most performances, in all genres. In some cases, particularly where the *ṭhekā* accompaniment is being used in instrumental *gat* forms, the *tablā* player bases his accompaniment on the *ṭhekā*, but varies the *bol* pattern noticeably between cycles, and interpolates new material (for example, repeating the soloist's rhythmic phrases or variations thereon) into the basic pattern.

- *Sāth saṅgat*: the accompanist leaves the *ṭhekā*, and plays *sāth saṅgat* ('synchronised accompaniment') in which he imitates the rhythm of the soloist with a minimal time delay, occasionally even anticipating him. This type of accompaniment is particularly important in *dhrupad-dhamār*, and is therefore associated with the *pakhāvaj*.<sup>13</sup> It is also known as *laṛant* ('fighting', see Kippen 1985:102 and Bhowmick 1975:39).

- Accompaniment with drum solo: the drummer plays virtuosic pieces, either drawn from the solo repertoire (eg. the *pakhāvaj*'s '*parans*') or improvised. This type of accompaniment is especially popular in *dhrupad-dhamār*, where *parans* are often played to

<sup>12</sup>The drum pattern should not however be confused with that metrical framework, which is a largely conceptual construct.

<sup>13</sup>See also 7.1.



accompany all or part of the statement of the *bandiś*. In instrumental *gats*, *tablā* solos (accompanied by the first line of the *gat*) are interpolated between episodes of melodic improvisation<sup>14</sup>; brief *tablā* solos are also heard occasionally in *choṭā khyāl*.

In the case of *ṭhekā* accompaniment, the accentual pattern of the drum line may influence the surface rhythm. This is not the case with other types of accompaniment, which tend to favour the quantitative aspect of rhythmic organisation, and features of syllabic rhythmic style such as *laykāñ*.<sup>15</sup> Thus the type of accompaniment is a significant rhythmic parameter, affecting rhythmic style and mode of rhythmic organisation.

### 4.3: The *bandiś*

#### 4.3.1: The place and importance of the *bandiś*

The fixed composition, called either *bandiś* or *cīz*<sup>16</sup> in vocal genres and either *bandiś* or *gat* in instrumental genres<sup>17</sup>, has a position of central importance in North Indian music performance. The vocal *bandiś* is essentially a song- a text set to *rāg* and *tāl*- which exists both as a piece of music in its own right, and as the basis of further musical development. In instrumental music the composition is either an imitation or adaptation of such a vocal *bandiś*, or a piece based instead on idiomatic stroke patterns, in which case it is called a *gat* (the term *bandiś* is used in the discussion which follows to cover all kinds of compositions).

The *bandiś* may be studied in terms both of its own structural parameters, and with reference to the material which it provides, in effect, for development. Since the material of the *bandiś* acts as the basis of subsequent development, study of the structural parameters of *bandiśes* effectively gives an indication of the overall rhythmic organisation and style of the performance.

The *bandiś* usually opens the *nibaddh* part of the performance; sometimes the complete *bandiś* is stated at this point, otherwise one or more sections are reserved until

<sup>14</sup>This style of accompaniment was popularised by Ravi Shankar in particular (see Kippen 1985:104).

<sup>15</sup>See 1.4.

<sup>16</sup>*Cīz* is used especially for *khyāl* compositions.

<sup>17</sup>In instrumental music, '*bandiś*' is used especially for adaptations of vocal compositions.

later in the performance. For instance the *antarā* section is often not sung or played until the upper Sa<sup>18</sup> has been established, in the *vistār* portion of a *khyāl* or *vilambit gat*. In some styles all or part of the *bandiś* may also be repeated towards the end of the performance. Moreover, either all or part of the first section (*sthāyī*) is used as a fixed refrain between episodes of improvised development (the first line of the *antarā*<sup>19</sup> is also sometimes used in this way).

The *bandiś* may itself constitute a large part of the performance: moreover it is used as the basis of much improvised development. Rhythmically, its structure (and the variability of that structure) give important clues as to the rhythmic style of the performer, and of the genre and style to which it belongs. The following section therefore outlines the principal structural parameters of the *bandiś*.

Any *bandiś* may be analysed with reference to a number of relevant structural parameters, the most important of which are the following;

- *tāl* and *lay*.
- length: the number of sections and lines; and the proportion of the total performance.
- rhythmic structure: as determined by the melodic rhythm; its correlation with the *tāl* structure (con- and contra-metric patterns, the use of syncopation and the use of the *mukhṛā* or anacrusis); and the influence of verse metre.
- variability of the *bandiś*, and the significance of variations.

Of these factors, *tāl* and *lay* are self-explanatory, and easily determined in each case. It will be seen that not only does *tāl* have an important influence on the *bandiś*'s rhythmic structure, but so too does *lay*.<sup>20</sup> The text below considers the other parameters in turn.

#### 4.3.2: The length of the *bandiś*

There is considerable variability in *bandiś* length- and in the proportion of the total performance taken up by statement of that fixed composition. *Bandiśes* are composed of

<sup>18</sup>Sa is the 'tonic' or base-note of the Indian octave.

<sup>19</sup>See below.

<sup>20</sup>Cf. 8.3.2 and fig 9.4 on the variation of *masītkhānī bol* patterns.



artist	genre/ form	tāl	lay (MM)	bandiś length		
				no. sect's	no. lines & cycles	% of perf. <sup>24</sup>
Dagar Brothers	<i>dhrupad</i>	<i>cautāl</i>	49-79	4	12/12	40+60*
Vidur Malik	<i>dhamār</i>	<i>dhamār</i>	60-80	2	4/5 <sup>25</sup>	40+60*
K.G.Ginde	<i>sādrā</i>	<i>jhaptāl</i>	90-104	4	16/16	50+50*
Pandit Jasraj	<i>barā khyāl</i>	<i>ektāl</i>	10.7-11.8	2	2/2	8
Veena Sahasrabuddhe	<i>khyāl</i>	<i>rūpak</i>	83-108	2	4/8 <sup>26</sup>	15
Bhimsen Joshi	<i>choṭā khyāl</i>	<i>drut tīntāl</i>	258-302	2	4/4	30
Munawar Ali Khan	<i>ṭhumrī</i>	<i>pañjābī tīntāl</i>	118-130	2	4/4	80 ( <i>bol banāo</i> )
Ravi Shankar	<i>masīt- khānī gat (sitār)</i>	<i>vilambit tīntāl</i>	46-81	3	3/3	15
Nikhil Banerjee	<i>madhya lay gat (sitār)</i>	<i>jhaptāl</i>	113-165	2	2/2	4
Amjad Ali Khan	<i>razākhānī gat (sarod)</i>	<i>drut tīntāl</i>	265-722	2 <sup>27</sup>	5/5	11

fig 4.5: A comparison of the length and proportion of performance of the *bandiś*, in a sample of 10 recordings of various Hindustānī genres.

These figures are based on particular performances, and therefore one should not generalise too much from the precise numbers. However, each is typical to some extent of its genre, and in this respect they illustrate some of the points made above. For instance the longest *bandiśes* are used in the *dhrupad* and *sādrā* examples (the latter is effectively in '*dhrupad*' style); the statement of the *bandiś* takes up a greater proportion of the performance in *dhrupad*, *dhamār* and *sādrā* than in any other genre. Overall the text use

<sup>24</sup>Approximate percentage of the performance, by time, constituted by the statement of the *bandiś* (unless otherwise stated).

\* the first figure refers to *bandiś* statement, and the remainder *bol bāṇṭ* using the *bandiś* text.

<sup>25</sup>In this performance the second text line takes two cycles to sing, and all others only one cycle.

<sup>26</sup>This *rūpak tāl khyāl* performance is the only one of this sample in which each line covers two cycles (cf 3.2.2, 7.3.2).

<sup>27</sup>Or 3, if the *sthāyī*'s second line is counted as a separate *mañjhā*.

was employed for the highest proportion of the performance in these genres and in the *thumrī*, and for the lowest proportion in the *barā khyāl*. These basic parameters therefore reveal some of the clearest differences between the genres, in a quantifiable manner.

#### 4.3.3: Rhythmic structure of vocal bandiśes: melodic rhythm

It is usually possible to determine the rhythmic structure of each *bandiś* (although this may vary somewhat from line to line, and section to section), based on the grouping implicit in the melodic rhythm, and the distribution of the text syllables and words. This structure may be entirely dependent on the *tāl* structure and divisions (for example a *jhaptāl bandiś* may have its melodic rhythm grouped 2323<sup>28</sup>). This is not necessarily the case however, either because the melodic rhythm runs contrary to the *tāl* divisions, or because the *bandiś* line overlaps the *tāl* line, in which case the portion of the *bandiś* preceding the *sam* forms an anacrusis, called the *mukhrā*.<sup>29</sup>

'Contra-metric' *bandiś* structures- in which the melodic rhythm forms a syncopated rhythm against the *tāl*- are particularly common in *dhrupad*. In the majority of *cautāl bandiśes*, the melodic rhythm falls into groups of three *mātrās*, often with word breaks between each of these groups.<sup>30</sup> The figure below is an illustration of such a rhythmic pattern in a *dhrupad bandiś*.

$$m = \downarrow = 49mm +$$

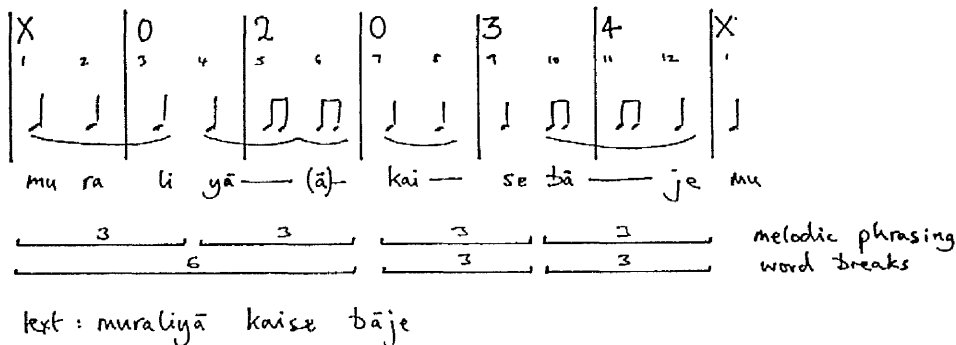


fig 4.6: The rhythmic structure of the first line of a *dhrupad bandiś*, as sung by the Dagar Brothers in *rāg jaijaivanti*, *cautāl*.

*Dhamār bandiśes* typically fall into groups of 4+3+4+3, with the first group of 4 *mātrās* functioning as an anacrusis (*mukhrā*). The figure below illustrates this;

<sup>28</sup>See fig 7.8.

<sup>29</sup>The *mukhrā* may be defined either as the anacrusis, or as the anacrusis plus *sam*. The former is more common in instrumental music, the latter in vocal.

$$M = \text{♩} = 60 \text{ mm} +$$

text: khelata hovē braja kī gōrē

fig 4.7: The rhythmic structure of the first line of a *dhamār bandiś*, as sung by Vidur Malik in *rāg jayant malhār, dhamār tāl*.

The use of a *mukhrā* is in fact common in most genres, and particularly so in

*khyāl*<sup>31</sup>; this figure illustrates a *choṭā khyāl bandiś*.

$$M = \text{♩} = 260 - 300 \text{ mm}$$

text: catura sughaṛa bālamvā (bālamvā)

fig 4.8: The rhythmic structure of the first line of a *choṭā khyāl bandiś*, as sung by Bhimsen Joshi in *rāg durgā, tīntāl*.

There are several differences between this example and the *dhrupad* and *dhamār bandiśes* above. For instance the word breaks appear to play no role in determining or supporting rhythmic structure; the text syllables are less evenly distributed, and hence the rhythmic style is less syllabic. The structure falls into two halves; the first half comprising the *mukhrā* plus the long note on *sam* is the basis of the structure, the second half (which may be seen as a secondary anacrusis to *khālī*) counterbalances this. The basis of the *bandiś* is therefore the *mukhrā*, and the remaining structure is worked around this, something typical of many, if not most, *choṭā khyāls*.<sup>32</sup>

<sup>30</sup>See below; also Widdess [1981a:137, and 1993]

<sup>31</sup>*Khyāl bandiśes* which do not have a *mukhrā* as such, use the whole first line as a refrain.

<sup>32</sup>*Choṭā khyāls* may be composed with a wide variety of rhythmic structures, and it is not feasible to cover any here, except for this very common type.

This is an important distinction between the construction of *khyāl* compositions and those of *dhrupad-dhamār*, which is even more noticeable in slow tempo *khyāls*. The following example shows how in *baṛā khyāls*, considerable melismatic embellishment is incorporated into essentially similar, *mukhrā*-based structures.

$$M = \text{♩} = 26 \text{ mm}$$

text: ālerī kituve gaye logovā jay sō gaye thā sukha pāyo re

fig 4.9: The rhythmic structure of the first line of a *baṛā khyāl bandīś*, as sung by Malikarjun Mansur in *rāg yemenī bilāval, tīntāl*.

These brief examples have illustrated the variety of *bandīś* structures in the main vocal forms. The most important rhythmic parameters are melodic grouping and text distribution (see below), the relationship of *bandīś* to *tāl* structure, the use or absence of a *mukhrā* and the rhythmic style. Other factors may be of rhythmic significance, for example the degree of rubato employed (the distortion of the underlying rhythmic structure for expressive effect). The employment of melisma is an important factor in rhythmic structure and style, and this must be taken into account in the case of *bandīśes* too.

There appear to be a number of more or less clear correlations between different structural features and wider rhythmic parameters. On the one hand, genres which favour more syllabic, rhythm-oriented styles tend to use *bandīśes* which comprise a greater part of the performance, and have a clearly defined rhythmic structure and relatively even text distribution. More melismatic styles on the other hand favour *bandīśes* of fewer lines and sections, more melisma and rubato, and often with the text concentrated in the *mukhrā*.

Other features such as the use of *tāl*-derived or contra-metric rhythmic patterns, and the employment of the *mukhrā*, are not so easy to tie in with these features. Clear contrametric structures (as opposed to *tāl* derived structures distorted by syncopation and

rubato) are indicative of rhythmically focussed, syllabic music, yet they are not an essential result of the same (*cautāl dhrupad bandīśes* are often set as a contrametric 3333, as above, but a grouping of 4422 which does not overlap the *tāl* is also heard- particularly in 'dhrupad' *bandīśes* played on the *bīn*).

The *mukhṛā* is an essential feature of *vilambit khyāls*, where it has a key role in performance practice: in many other genres it is optional, but it remains a common feature in most. The common use of the *mukhṛā* (anacrusis) is not surprising, given the preference for iambic, anacrustic and cadential features in Indian rhythm.

### Verse metre and text distribution

The relationship between verse metre and musical rhythm in modern Indian music has not yet been studied in any depth. A thorough study is also beyond the scope of this thesis, but a number of observations may usefully be made nonetheless, with respect to the influence of verse metre on the melodic rhythm of vocal *bandīśes*. One must also consider the related questions of the distribution of text syllables over the *tāl* cycle, and the significance of word breaks in determining melodic rhythm in vocal *bandīśes* (see above).

*Bandīś* texts are generally composed in either modern standard Hindī (Kharī Boli), or one of the literary 'dialects' (such as Braj Bhāṣā and Avadhī); a very few compositions may also be encountered in modern Indian languages other than Hindī, and even in Sanskrit. The prosody of Indian languages is a vast topic, but in general we may say that verse metres are based on the quantity and/or arrangement of syllables. Each text syllable (*akṣara*) is classified as either *laghu* ('short, light') or *guru* ('long, heavy')<sup>33</sup>, metres are defined according to either the arrangement of *laghu* and *guru akṣaras*, or according to the total number of *akṣaras*, or according to the sum total of the metric quantities of the *akṣaras* in each line. In the latter case, a *laghu akṣara* counts as 1 *mātrā*, and a *guru* as 2 *mātrās*. Scansion is usually reckoned in groups of syllables called *gaṇa* ('foot').<sup>34</sup>

A variety of verse metres may be encountered in *bandīś* texts, although in many cases the metre is imperfectly realised (which may often happen, due perhaps to

<sup>33</sup>In general, syllables containing the vowels *ā, ī, ū, e, ai, o* or *au* are considered long (*guru*); those containing the remaining vowels (*a, i, u, r*) are short (*laghu*) unless followed by a conjunct consonant (*kt, sp, tr* etc.), *anusvara* (nasalisation representing in effect a conjunct consonant, ie. *ṛj, nt* etc), or *visarga* (*h*) [Snell 1991b:19].

<sup>34</sup>See Snell [1983:369, 377; 1991b:20ff] and Chandola [1988:81].



inaccuracies in transmission). In fact many *bandīś* texts, probably the majority, are not recognisably set in any metre.<sup>35</sup> The most detailed study of musical settings of verse in North India yet undertaken is that of Snell, into the musical performance of devotional Braj Bhāṣā texts. He found that “The metres of the CP [Caurāṣī Pada] for the most part show a close correlation to *tālā* structure” [1983:354], and his work illustrates this relationship with examples transcribed from performance [1983, 1989].

Although this temple tradition lies outside the range of the present work, it is nonetheless relevant since it is closely related to the classical *dhrupad-dhamār* style, and indeed many of the devotional texts may be heard in either context. Moreover, parallels may be found between the ways in which text is set in these two types of music. For instance Snell transcribes a text in the *vinaya* metre (12+12+12+8 *mātrās*), sung in the 12 *mātrā* *cautāl*. The first line is sung in the following rhythm [1983:365];

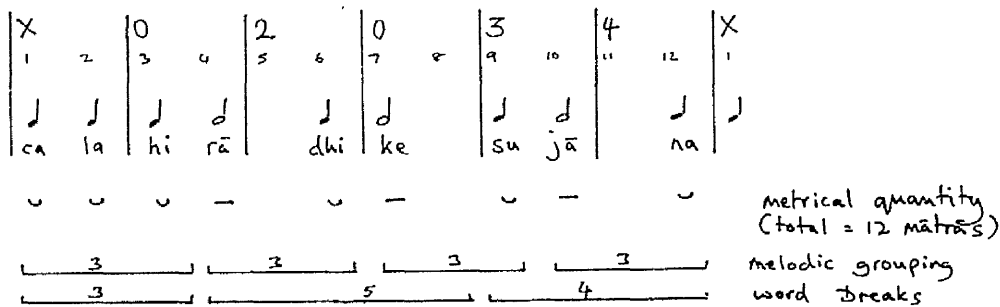


fig 4.10: An illustration of the correlation of melodic rhythm and verse metre; from a setting of text from the Caurāṣī Pada (after Snell 1983:365).

In effect, each long syllable (*guru*, marked —) occupies two *mātrās* of the *tāl* cycle, and each short syllable (*laghu*, marked v) one *mātrā*; the correlation of verse metre to *tāl* could not be more exact. Few *cautāl dhrupads* are composed in this metre- most are in fact free verse ‘*pads*’<sup>36</sup>- yet some of the features of this piece are still observable. For instance the *dhrupad* transcribed in fig 4.6 above shows one important similarity with the piece in fig 4.10, in that the melodic rhythm falls into groups of 3 *mātrās*, and in 3 out of the 4 groups no syllable falls on the second *mātrā* of the group.<sup>37</sup>

<sup>35</sup>Cf. Delvoye “Most of the *dhrupadas* available in printed editions have a rather loose metrical structure” [1983:90]. See also Snell [1983:376].

<sup>36</sup>A *pad* is a ‘hymn’; the term is often used to describe verses of loose metrical structure in particular.

<sup>37</sup>Cf Widdess [1993].

$$M = J = 49 \text{ mm} +$$

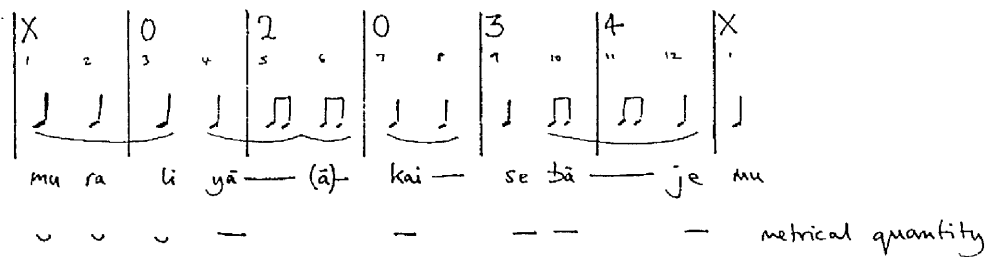


fig 4.11: An illustration of the lack of correlation of melodic rhythm and verse metre; from a *dhruvād* performance (cf. fig 4.6).

The *dhruvād bandiś* transcribed here does not share the metre of Snell's *Caurāśī Pada* text, and the correlation of text syllable quantity with duration is not nearly as simple.<sup>38</sup> The preference for (2+1) x 4 groupings in *cautāl* settings of *dhruvād* texts- as exemplified here- may however be an instance of indirect influence of verse metre<sup>39</sup> on musical rhythm.

A somewhat different situation is illustrated in the *dhamār bandiś* whose first line is transcribed in fig 4.7. In this case the text is composed in a regular metre, but this metre does not correspond to the *tāl*. Each line of text consists of 16 *mātrās*, yet the text is set in the 14 *mātrā dhamār tāl*. In the first line (fig 4.7), the metre has been accommodated within the typical *dhamār bandiś* pattern of 4+3+4+3, with the first group constituting a *mukhārā* (as in the *cautāl* examples above, the groups of three are split 2+1). The text syllable to *tāl mātrā* correlation is as close as could be accomplished in setting a 16 *mātrā* verse metre in a 14 *mātrā tāl*.

$$M = J = 60 \text{ mm} +$$

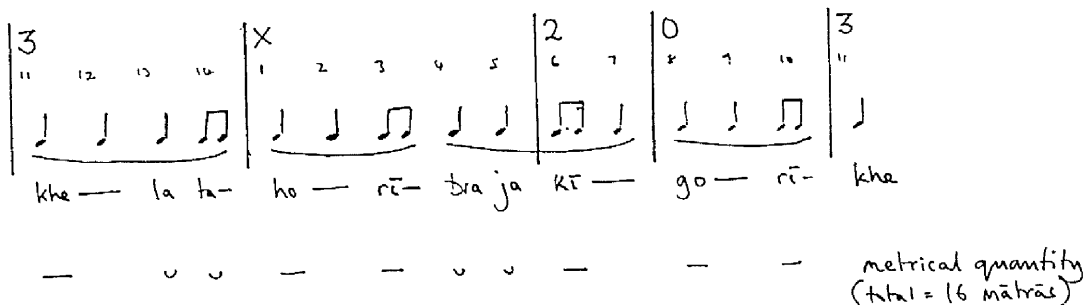


fig 4.12: An illustration of the setting of a 16 *mātrā* text line in *dhamār tāl* (cf. fig 4.7).

<sup>38</sup>There are examples of *dhruvād* texts based on *guru-laghu* groups; see the first line of the *bandiś* transcribed in Widdess [1981a:174].

<sup>39</sup>Either the *Vinaya* metre above, or others based for example on repetition of *guru-laghu* groups (ie. 2+1 *mātrās*); see Snell [1991:26-7].

These examples illustrate that in the syllabic settings of *dhrupad* and *dhamār* texts, some influence of poetic metre may be experienced. This influence is much less than that observed in the temple tradition described by Snell, and is indicative of the fact that in classical music the dictates of musical structure override poetic considerations, whereas in temple singing the music is regarded primarily as a vehicle for expression of the text.

In other vocal genres such as *khyāl* and *thumrī* the musical considerations are yet more dominant, and the influence of verse metre is in most cases negligible. This fact is demonstrated in the *choṭā khyāl* transcribed in fig 4.8. In this example the text syllables are concentrated in the 5-*mātrā mukhrā*. The verse is free of metrical restrictions, and the musical setting not determined by syllabic quantity; the syllable of longest duration is the metrically short 'ra' which falls on *sam*. This *choṭā khyāl* is typical of the genre in that the rhythmic construction clearly takes precedence over poetic considerations.

$M: J = 260-300 \text{ mm}$

fig 4.13: An illustration of the setting of a metrically free *khyāl bandish* (cf. fig 4.8).

Overall therefore it must be said that verse metre is not a major factor in determining the melodic rhythm of *bandishes* in most genres,<sup>40</sup> although some such influence may be heard in the settings of texts in music of syllabic rhythmic style, particularly *dhrupad-dhamār*. Another fact noticeable here is that the breaks in the melodic rhythm often correspond with word breaks- again, especially in *dhrupad-dhamār*. This suggests that the text is often made to fit an essentially predetermined melodic rhythm, rather than the melodic rhythm being derived from the metre; this situation is the opposite of that in the temple singing, where word breaks overlap the melodic rhythm, and melodic rhythm is metrically determined.

<sup>40</sup>The lack of correlation between verse metre and *tāl* in most *khyāl bandishes* is confirmed by the fact that the same text may often be set in more than one *tāl*. This fact is noted by Wade [1984a:14, 24ff], and (with respect to *thumris*) by Manuel [1989:109-110]

In *khyāl* the distribution of text syllables over the cycle is significant: the concentration of text in the *mukhrā* in fig 4.13 above is typical of the genre- and is also observable in the *baṛā khyāl* illustrated in fig 4.9. In fact the distinction between this concentration of text in the *mukhrā*, and the more even text distributions found in the more syllabic genres, makes the distribution of text syllables an important rhythmic parameter.

#### 4.3.4: Rhythmic structure of instrumental gats

Instrumental compositions may be imitations or adaptations of vocal *bandīśes* (and this applies particularly to the repertoires of blown or bowed instruments such as the *bānsurī* and *sāraṅgī*), or else idiomatic pieces based on stroke patterns, called *gats*. Most *sitār* and *sarod* compositions may be classified as *gats*; in these pieces the stroke pattern takes on a role analogous to the text of the vocal *bandīś*.

Most instrumental *gats* feature *mukhrās*, and distribute the *bols* (strokes) fairly evenly over the *tāl* cycle. The structures are therefore similar in principle to *dhamār* or *dhrupad bandīśes* which feature *mukhrās*, or to the more syllabic *khyāls*. *Gats* may be divided into three classes according to tempo, as follows;

- *vilambit gats*; the overwhelming majority of which are in *tīntāl*, and based on the ‘*masītkhānī*’ stroke pattern.
- *madhya lay gats*; which may be played in a number of *tāls* (eg. *jhaptāl*, *rūpak tāl*, *tīntāl*), with a number of possible structures.
- *drut gats*; most of which are in *tīntāl* or *ektāl*, many of the former based on the ‘*razākhānī*’ pattern.

Some of the more common *gat* structures are illustrated below, starting with the well known ‘*masītkhānī gat*’. The basic *masītkhānī* pattern has a 5-*mātrā mukhrā*, and consists of a repeated 8-*mātrā* stroke sequence, as follows;

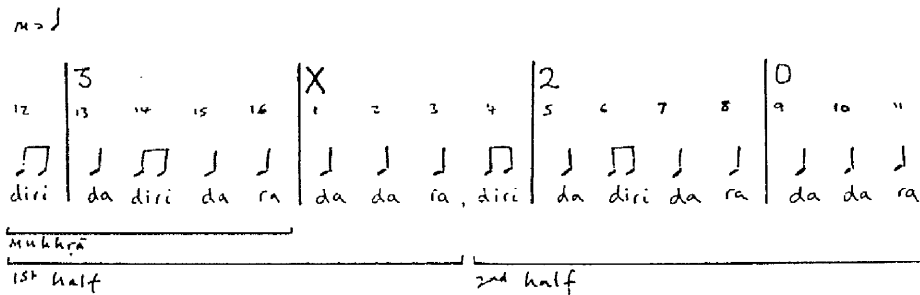


fig 4.14: The basic *masītkhānī gat* stroke pattern, in *tīntāl*.<sup>41</sup>

The strokes here are employed in ways comparable to the use of text syllables in the vocal *bandīśes* above. At medium tempi the settings are syllabic, with “da” and “ra” long and “diri” short; at slower tempi *melisma* (*mīṇḍ*) is interpolated between strokes, in a manner comparable to the *vilāmbit khyāl* in fig 4.9.<sup>42</sup> *Madhya lay* (ie. medium tempo) *gats* use a variety of patterns- running from *sam* to *sam* or with *mukhṛās*, syncopated or not- and many of these are illustrated in chapter 7. *Drut gats* also exist in a variety of different forms. One of the most common is the *tīntāl ‘razākhānī’ gat*, which starts from the 7th *mātrā* (ie. has a 10 *mātrā mukhṛā*). The basic pattern is usually taught as follows;

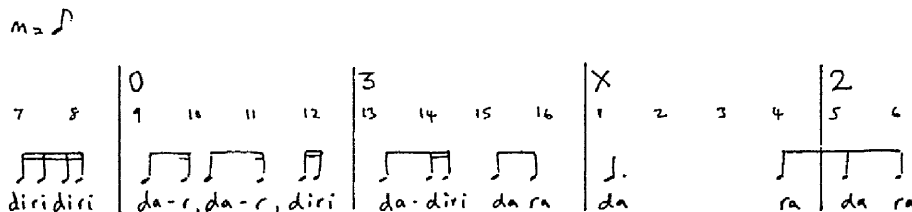


fig 4.15: The basic *razākhānī gat* stroke pattern, in *tīntāl*.<sup>43</sup>

In practice this pattern may be varied considerably; the example below illustrates such a variant *razākhānī* pattern- the *mukhṛā* starts one *mātrā* earlier, and the part following *sam* is omitted.



fig 4.16: The first line of a *razākhānī gat* played by Amjad Ali Khan (*sarod*) in *rāg nandkauns, tīntāl*.

<sup>41</sup>‘da’ is an inward stroke, ‘ra’ an outward; at a fast pace da and ra together are pronounced ‘diri’.

<sup>42</sup>The application of this *gat* pattern, and variations upon it, will be considered in ch 8.

<sup>43</sup>From Ravi Shankar, quoted in Slawek [1987:64].

Not all *drut gats* are *razākhānī gats*- although in practice the name is often used indiscriminately. Instrumentalists have created *drut gats* with an enormous variety of patterns- again, *sam* to *sam* or using *mukhrās* of different lengths, based on *bol* patterns but often incorporating a variety of left hand, essentially ornamental, techniques (especially in the case of the *sītār*). The description of all the varieties is beyond the scope of the present work; the examples given above illustrate the most important features of instrumental *gats*. In the case of *vilambit* and *madhya lay gats*, a more detailed discussion will follow in Section II.

#### 4.3.5: Further issues in bandīś structure: a note on mukhrās

It is notable that a similarity exists between the *mukhrās* of the *masītkhānī* and *razākhānī gats*, and the *khyāl* illustrated in fig 4.8. The *masītkhānī* pattern uses a 5-*mātrā mukhrā*, as does this *khyāl*, while the *razākhānī gat*, which is played at a faster tempo, has a 10 *mātrā* anacrusis. The relationship between the three is illustrated below.

	<i>masītkhānī gat</i>
	<i>chotā khyāl</i> (fig 4.8)
	<i>razākhānī gat</i>

fig 4.17: A comparison of *mukhrās* from compositions in three different genres.

In each of these three instances a strong accent is felt on *sam*; more often than not a weaker accent is felt four beats previously as well. This suggests that the first of the five *mātrās* (or the first two of ten in the latter case) acts as a mini-anacrusis, preparing for the next 4 (or 8).<sup>44</sup> It is not possible to say where this feature originated, but it does seem that in genres where the *mukhrā* plays an important role in performance practice, a preference for five beat patterns is frequently observed.<sup>45</sup>

<sup>44</sup>A view suggested to me by *sītārīst* Deepak Choudhury (pers. com.).

<sup>45</sup>A number of *dhrupads* also feature 5-*mātrā mukhrās* (see the examples in Widdess 1981a:162). Cf. Deepak Choudhury's 2 1/2-*mātrā mukhrās*, as performed in *madhya lay gats* (ch. 7).

A similar feature may also be observed in *vilambit khyāl bandīśes*, where the *mukhrā* generally retains a relatively high rhythmic density, and is compressed into a smaller portion of the *tāl* cycle. Two *vilambit khyāl mukhrās* are illustrated below. The first is  $1\frac{3}{4}$  *mātrās* long and the second (which is sung at roughly half the tempo of the first), only  $1\frac{3}{8}$  *mātrā*. *Vilambit khyāl mukhrās* often last between one and two *mātrās*: the first part may prepare for the last full *mātrā*, in a manner similar to the five beat patterns illustrated above.



fig 4.18: A comparison of *mukhrās* from two *vilambit khyāl bandīśes*.<sup>46</sup>

#### A note on the *antarā* and variation of structure between lines

The discussion has concentrated mainly on *sthāyī* sections up until now, since the *sthāyī* (and the first line in particular) is almost invariably the most prominent part of the composition. The *sthāyī* is generally repeated many times in a single performance, whereas the *antarā* and other sections are rarely heard more than once or twice. *Antarās* may however be analysed with reference to the same parameters employed above; the results (and comparison between sections) will yield further information on rhythmic style and performance practice. A number of factors are noticeable in comparison of *sthāyī* and *antarā* sections, since they are not bound to share the same structure, and frequently do not.

In *dhrupad* and *dhamār bandīśes*, *antarā* sections generally follow the same structural principles as *sthāyīs*, but may be distinct in detail. For instance if the melodic grouping of the first line is 3333 (in *cautāl*), then subsequent lines (including the *antarā*) may either follow the same pattern, or change to 444 (or some other division such as 2433).

<sup>46</sup> 'a' is from fig 4.9 (Malikarjun Mansur, *rāg yemenī bilāval* in *vilambit tīntāl*); 'b' is from a performance by Pandit Jasraj of *rāg miyān-kī-toḍī* in *vilambit ektāl*.

A more striking distinction may often be noted between the structural parameters of *khyāl sthāyīs* and *antarās*. Whereas almost all *sthāyīs* have *mukhrās*, *antarās* may have either no *mukhrā*, or a *mukhrā* of different construction to that of the *sthāyī*.<sup>47</sup> *Khyāl antarās* also tend to have more syllables than the preceding sections, and the rhythmic style is consequently often more syllabic- although there is considerable variation in this respect between *khyāl* styles.<sup>48</sup>

The situation in *vilambit khyāl* is that the *antarā* is often not sung through- at least not in the form of a continuous setting of the *antarā* text line. What happens more often is that the *antarā* text is introduced into the improvised *bol ālāp*, as the melodic development reaches the upper Sa.

In *masītkhānī gats*, the *antarā* (and *mañjhā*) sections are always based on the same stroke pattern as the *sthāyī*. *Drut gats*, in contrast, often use different patterns for each section (and often for each line) of the composition. Sometimes- as with *choṭā khyāl bandīśes*- these omit or change the *mukhrā*. Another distinction between *vilambit* and *drut gats* is that *vilambit gat antarās* are often improvised, whereas in *drut gats* they are generally pre-composed. To some extent therefore, the distinction between *choṭā* and *baṛā khyāl antarās* is matched by an analogous difference between those of *drut* and *vilambit gats*.

These points illustrate that while the *sthāyī* (and particularly the first line and its *mukhrā*) is the most important part of any *bandīś*, especially in terms of its influence on the rhythmic style of the performance, it is also profitable to consider *bandīśes* as a whole.

#### Variation of the *bandīś* structure

A factor which should not be overlooked is the variability of *bandīśes* in performance, because in most performances a greater or lesser degree of variation of the *bandīś* may be observed. Since the *bandīś* may therefore be slightly different on each repetition, it is often impossible to determine exactly what the true or basic form of the composition is.<sup>49</sup>

<sup>47</sup>Similarly, although some *dhrupad sthāyīs* have *mukhrās*, the *antarās* generally do not.

<sup>48</sup>See Wade [1984a:19]. A similar point is made with respect to *madhya* and *antarā* sections of *thumrī bandīśes* by Manuel [1989:121].

<sup>49</sup>Although it is common for *bandīśes* to be notated, such notations do not specify a high level of detail, either melodic or rhythmic. They are intended rather as an aide memoire; in analysis the performance of the *bandīś* must assume primacy over its notated form.



Variations may be primarily melodic (substituting alternative melodic movement, without changing text and rhythm), or rhythmic but superficial (eg. slight variations in rubato or ornamentation, or displacement of syllables off the main beat). It is not uncommon however for other rhythmic parameters to change too; text distribution for example, or rhythmic density in instrumental *gats* where double strokes may be substituted for single (♩ → ♪ → ♪♩). In many cases such variation is substantial enough to warrant serious attention.

What appears at first to be a problem in rhythmic analysis, may prove in fact to be of benefit, since that variation may tell us a great deal of positive value. If we analyse what is varied (and what is constant), how much it is changed and in what ways, this will reveal something about the essential rhythmic structure of the *bandiś*, and the performer's style. (For example, we may find in a particular instance that text syllables are always sung at the same point in the cycle, or in another case that the exact position of syllables may change but the text phrase is always completed within a certain time-span. )

In instrumental *gats*, certain *bols* may be varied at will and others may not (see 8.3.2), which tells us something about the *gat*'s structure and function. Even the absence of any variation, unusual as it would be, would be notable. Variability then is a positive factor, to be taken into account in the determination of the rhythmic structure of a *bandiś*.

### Summary

The *bandiś* plays an important role in North Indian performance practice. It constitutes a substantial proportion of the performance itself, besides providing material for the development that follows. *Bandiśes* may be analysed with respect to a number of rhythmically significant parameters. These include *tāl*, *lay*, the length of the *bandiś*, rhythmic structure as determined by melodic rhythm, variability of that structure, and text distribution. It should be possible to trace correlations between these parameters, and between the *bandiś* structure as a whole and the variables of rhythmic style and organisation.

The material introduced in the *bandiś* will also strongly influence the development phase. This is the subject addressed in the following section; this will consider the principal

development techniques and processes in Hindustānī music, and their rhythmic implications.

#### 4.4: Development techniques and processes

As noted above, a rough distinction may be drawn in the post-*bandīś* phase of performance, between development with a strong rhythmic and/or textual component and that which focuses overwhelmingly on development of melodic material. Although it is not always possible to clearly distinguish these categories, the *rāg*-oriented development (*ālāp*, *vistār*) often features a highly melismatic style, and a far less clearly defined *tāl*-surface rhythm relationship than other types of improvisation.

This means that analysis of this kind of music must apply a different set of premises from that of rhythm-oriented development. Rhythmic development may reasonably be analysed in terms of syllabic organisation, *laykārī*, and the relationship between surface rhythm and *tāl*. *Rāg*-oriented development has different terms of reference: here questions of rhythmic organisation focus on the methods by which musicians achieve an impression of free-rhythm while retaining awareness of the *tāl*, and on transitions from 'free-rhythm' to the relatively well structured *mukhrā* refrain, and back again.

There is a degree of overlap and mutual influence between even these two categories; *rāg* development in apparently free-rhythm may elide with a cadential *tihāī*, or overtly rhythmic development may incorporate elements of melisma and rubato. Even the most syllabic, rhythmic passages may be organised melodically so that the melodic range is gradually extended, as it is in an *ālāp*<sup>50</sup>; naturally, this thesis is concerned with rhythmic factors primarily, but this point is worth noting. These qualifications notwithstanding, the distinction between *rāg*-oriented (melismatic) and rhythm and/or text-oriented (syllabic) development will be applied in the following sections.

<sup>50</sup>Indeed the term *vistār*, which I have used primarily to refer to *ālāp*-like *rāg* development in *nibaddh* sections, is often used as a general term for all post-*bandīś* development. It may even be employed by *tablā* players to refer to the analogous development of a fixed composition in solo performance (see Gottlieb 1977:53ff).

#### 4.4.1: Rāg-oriented development

In much *khyāl* singing (and *khyāl*-based instrumental styles), we find a more or less systematic *rāg* development within the *tāl*-bound section, akin to the unmetered *ālāp* of *dhrupad* and *dhrupad*-based instrumental styles. This *rāg* development (called *vistār*, *ālāp*, *ālapti* or *barhat*) focuses on the expansion and variation of melodic material, and rhythmic considerations are subjugated to melodic. Rhythm is not always clearly defined and nor is the *tāl*-surface rhythm relationship, so that *laykāri* as such has no relevance. Vocalists use 'ā' or other vowels (called *ākār*), or else use text syllables in a melismatic fashion. Since the articulation points of notes are consequently often unclear, especially those falling within a melisma, it can be extremely difficult to analyse rhythm in 'syllabic' terms.

However, in a more general sense, these passages can be seen in the context of the *tāl* and the various performance processes. The main parameters will be the starting point of the passage, its length (or the length of individual phrases), the introduction of the *mukhārā* and the attendant shift to a more syllabic rhythmic style, and the text distribution (in *bol ālāp*). Although the impression of free rhythm is often created, even the most melismatic *vistār* is rarely completely 'uncoupled' from the *tāl*: singers show wide variation in the manner and degree of *tāl*-surface rhythm correlation. In most cases, some rudimentary form of rhythmic organisation may be traced, but a 'rhythmic' transcription is not always appropriate, and may be by-passed in the search for a more fundamental appreciation of the processes involved in performance.

The transcription of *rāg vistār* is problematic for reasons such as that cited above—the articulation points of syllables may be difficult to determine. Phonetic rhythmic transcriptions in many cases suggest a rhythmic complexity which is illusory, since the performer is concerned in such cases with the development of melodic material: they may nevertheless be useful, especially where they incorporate indications of text use.

The figure below is a rhythmic transcription of a portion of development from a *vilambit khyāl* performance.

$m = d = 25 \text{ mm}$

c.9

(ga) ye lo go vā āle rī

kituve gaye lo go vā una sō gayethe

sukha pāyo āle rī kī kitu ve-ga ye

text: ālerī kituve gaye logovā una sō gayethe sukha pāyo

'ālāp':

ālerī kituve gaye logovā, ālerī kituve gaye logovā una sō gayethe sukha pāyo, ālerī kituve gaye.

mukharā

fig 4.19: A rhythmic transcription of a portion of development, from a *khyāl* performance by Malikarjun Mansur of *rāg yemenī bilāval* in *tīntāl*.

This example is typical of much 'vistār' in *barā khyāl* in that it blends melismatic *ālāp* with more syllabic fragments. If definitions of development techniques were applied rigidly, this passage would have to be described as a synthesis of *bol ālāp* and *bol bāñṭ*. The singer uses the *sthāyī* text throughout; the use of text (in this instance) is at some points comparable to that of *bol bāñṭ* (see the example in fig 4.20 below), in others it is highly melismatic (this would be called *bol ālāp*). In fact, since the three longest melismas are sung to the vowel 'ā' (m. 3-4, 6-8, 14-15), there is little to distinguish these passages from *ākār ālāp*.

It is significant that the words 'logovā' and 'ālerī', which are treated melismatically in the first half of the cycle, both finish at the end of their respective *vibhāgs*. This suggests- albeit circumstantially- that the artist is organising even his melismatic *ālāp* with a clear awareness of the *tāl*. This hypothesis is confirmed by other factors: displacement of syllables 1/2- or 1/4-*mātrā* off the beat occur consistently in the early part of the *vibhāg*, and the syllables held for the longest time occur in mid-*vibhāg*.

Although this brief example of 'rhythmic' analysis of music which is often apparently free-rhythmic cannot hope to do justice to the variety and complexity of *khyāl vīstār*, it nevertheless introduces the application of these theoretical ideas, and illustrates some of the important issues in analysis of *rāg*- oriented development. Firstly, the categories of development- *bol ālāp*, *bol bāñṭ* and so on- are of limited use in analysis. Secondly, an analysis of text use and rhythmic style helps substantially in clarifying the rhythmic organisation of this music.

#### 4.4.2: Rhythm and/or text-oriented development

In most genres other than *khyāl* (and indeed much *khyāl* too), *ālāp* is either unnecessary or has already been completed in previous sections; thus most development is focussed on text, rhythm or both. The melodic material of the *rāg* is naturally ever-present, and on occasions rhythmic or textual variations may be combined with melodic development or ornamentation, but where deliberate techniques of rhythmic and/or textual development are identified, we may justifiably focus on these in rhythmic analysis.

A wide variety of *laykārī* techniques may be identified, which will be dealt with in chapter 5: this section will consider development techniques which focus on aspects of the variation of text or instrumental stroke patterns. It is the application of these techniques or processes that directly generates much rhythmic complexity, besides providing a context for more explicitly rhythmic play. The most important categories are outlined here;

- breaking the text (generally into semantic units), in order to generate new rhythmic combinations; *bol bāñṭ*.<sup>51</sup>

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<sup>51</sup>Cf Srivastav [1980:52].

- expressive melodic development or elaboration employing the text, using melismatic ornamentation; *bol banāo*.<sup>52</sup>
- fast runs (ie. using notes of equal rhythmic quantity at high rhythmic density), sung to text syllables; *bol tān*.
- imitation of any of these techniques, substituting *sargam* (solfège), *tarānā* syllables, or vowels for text syllables (*sargam tān*, *ākār tān* etc).

Many types of vocal technique may be imitated on instruments; in the case of plucked instruments, *bols* (strokes) replace the text syllables in function. The terms *bol bāñṭ*, *bol banāo* and *bol tān* are not generally used for instrumental music: however in instrumental *gats* a process somewhat analogous to *bol bāñṭ* occurs, in which the material of the *gat* is broken up, rearranged and developed (called *toḍā*). Fast runs are called *tāns*, in instrumental as in vocal music.

There are clearly overlaps between these different approaches to the text, and between each of them and the more *rāg*-oriented *bol ālāp*. The most obvious overlaps are between *bol ālāp* and *bol banāo*, and between *bol bāñṭ* and *bol tān*. It is not always possible to objectively distinguish *rāg* development sung to text syllables (*bol ālāp*), from textual development using melismatic ornamentation (*bol banāo*); similarly at high rhythmic density *bol bāñṭ* may resemble *bol tāns*.

If it is clear which process is intended, this is often because certain techniques are identified with particular genres. For example in *dhrupad*, improvised development (*upaj*) may be assigned to the *bol bāñṭ* category, since *dhrupad* development is exclusively identified with that process- terms such as *tān* would never be used in this context. In modern *ṭhumrī* the primary process is *bol banāo*,<sup>53</sup> and terms such as *bāñṭ* or *tān* would rarely if ever be used. In *choṭā khyāl* on the other hand, the text is rarely employed outside the *bandiś*, and *tāns* (especially *ākār tāns*) predominate. *Tāns* also have an important place in instrumental *gat* development, preceded by melismatic *vistār* (in slow tempo) or by syllabic *toḍā* (in medium and fast tempi).<sup>54</sup>

<sup>52</sup>*Banāo*, as Manuel points out, has a range of meanings from 'formation' through to 'decoration' or 'embellishment' [1989:131-2].

<sup>53</sup>See Manuel [1989:105ff].

<sup>54</sup>See chs 7 & 8.

*Khyāl* remains the most eclectic and varied of North Indian vocal genres, and may use and combine any of the techniques described above (depending on the particular style and the *lay*). In analysis of *khyāl* it is often difficult for an observer to know exactly which terms best define the development style, but nevertheless an appreciation of these technical categories is invaluable.

The examples that follow illustrate the techniques described above. The first illustrates *bol bāñṭ* in a *sādrā* (effectively a *jhaptāl dhrupad*); the second *ṭhumrī bol banāo*, and the third a succession of techniques (*sargam*-, *ākār*- and *bol tāns*) from a single *khyāl* performance. Firstly the *bol bāñṭ*,

$n = \text{♩} = 95-97 \text{ mm}$

c. 34  $\left| \begin{array}{c} \text{X} \\ 1 \end{array} \right| \begin{array}{c} 2 \\ 2 \end{array} \left| \begin{array}{c} 3 \\ 3 \end{array} \right| \begin{array}{c} 4 \\ 4 \end{array} \left| \begin{array}{c} 5 \\ 5 \end{array} \right| \begin{array}{c} 6 \\ 6 \end{array} \left| \begin{array}{c} 7 \\ 7 \end{array} \right| \begin{array}{c} 8 \\ 8 \end{array} \left| \begin{array}{c} 9 \\ 9 \end{array} \right| \begin{array}{c} 10 \\ 10 \end{array} \left| \begin{array}{c} \text{X} \\ 1 \end{array} \right|$

vidyā dhara gaṇi - ni yaṇa - sō vi dyā

c. 35  $\left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right|$

dhara ra vi dyā dhara gaṇi yaṇa sō kahā - ka

c. 36  $\left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right|$

rī ye, ka chagaṇa caṇa cā kī la rāṭ lāri ye vi dyā

c. 37  $\left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \left| \begin{array}{c} \text{♩} \\ \text{♩} \end{array} \right|$

dhara ra vi dyā dhara ra, vi dyā dhara ra, vi dyā dhara

text: vidyādhara gaṇiyana sō kahā kariye, kachu guṇa caracā kī larāṭ lāriye.

bol bāñṭ: vidyādhara gaṇiyana sō,  
vidyādhara,  
vidyādhara gaṇiyana sō kahā kariye, kachu guṇa caracā kī larāṭ lāriye  
vidyādhara,  
(vidyādhara) × 3.

fig 4.20: A rhythmic transcription of a passage of *bol bāñṭ*, from a *sādrā* performance by K.G.Ginde of *rāg khaṭ* in *jhaptāl*.

This example shows how *dhrupad* singers repeat phrases and lines of the *bandīś* text, in *bol bāñṭ*. The music is particularly syllabic, and illustrates how the surface rhythm is

determined to a large extent by the use of the text. The episode ends with a *tihāī* (triple repetition, see 5.2.4), in c.37. The next figure illustrates *ṭhumrī bol banāo*;

$M = \text{♩} = 123 \text{ mm}$

The transcription consists of three lines of musical notation, labeled c.9, c.10, and c.11. Above the notation is a measure count: 1 2 3 4 | 5 6 7 8 | 9 10 11 12 | 13 14 15 16 | 17. The notation uses various note values and rests, with lyrics written below. The lyrics are: jāy [RAK], bā [MAK], ju, dan, dhe, bā, ju, dan, dhe, khu le, khu le, khu... The transcription is a rhythmic representation of a passage of bol banāo.

[RAK] = Raza Ali Khan [MAK] = Munawar Ali Khan

fig 4.21: A rhythmic transcription of a passage of *bol banāo*, from a *ṭhumrī* performance by Munawar Ali Khan of *rāg bhairavī* in *sitārkhānī tāl*.

Here also phrases and lines of text are repeated: however in contrast to the *dhrupad bol bāñṭ*, the focus is on the melismatic ornamentation of that text. The setting is therefore not syllabic, and the surface rhythm is freer and not determined directly by the sung text. The following example is taken from a medium tempo *khyāl* performance.



$$m = \text{♩} = 89-94$$

c. 76-77

X/0	1	2	3	1	2	3	X/0	1	2	3	X/0
1	2	3	4	5	6	7	1	2	3	4	5
re	ma	pa	ma	pa	ni	sa	ni	o	ni	dh	pa
sargam t̃an											

c. 78-79

♩	♩	♩	♩	♩	♩	♩	♩	♩	♩	♩	♩
pa	pa	re	sa	ja	su	ra	tā	la	pa	da	sa
mukhrā gat sthāyī											

c. 80-81

♩	♩	♩	♩	♩	♩	♩	♩	♩	♩	♩	♩
ge	ta	sa	ja	su	ra	tā	ta	ta	ta	ta	ta
(accel.)											

c. 82-83

(♩ = 103-106mm)	♩	♩	♩	♩	♩	♩	♩	♩	♩	♩	♩
sa	ja	su	ra	tā	ta	ta	ta	ta	ta	ta	ta
ākār t̃an											

c. 84-85

♩	♩	♩	♩	♩	♩	♩	♩	♩	♩	♩	♩
sa	ja	su	ra	tā	ta	ta	ta	ta	ta	ta	ta
ākār t̃an											

c. 86-87

♩	♩	♩	♩	♩	♩	♩	♩	♩	♩	♩	♩
tā	la	pa	da	sa	gi	ta	sa	ja	su	ra	tā
bol t̃an											

fig 4.22: A rhythmic transcription of a passage of development from a *khyāl* performance by Veena Sahasrabuddhe of *rāg śrī* in *rūpak tāl*, featuring *sargam*-, *ākār*- and *bol t̃ans*.

This last example illustrates the varied nature of post-*vistār* development in much *khyāl*, especially in medium tempo. A simple *sargam t̃an* links- via the *mukhrā*- to a restatement of the *sthāyī* (c.76-79). This is followed by a sequence of short and fast *ākār t̃ans* (c. 83-85), then a longer and slightly slower *bol t̃an* (c.86-87). The *bol t̃an* lies, in terms of rhythmic style, between the syllabic *bol bāṇṭ* and the melismatic *bol banāo*.

These three examples show the most important post-*vistār* development techniques in vocal music. They are clear cut illustrations of these techniques; it is not feasible to demonstrate here the variability of their application, the overlaps between and blending of the techniques, or indeed the differences between the various singing styles, *gharānā* or individual.

One fact clarified by comparison between figs 4.19 to 4.22 is that development in vocal genres is largely defined by two parameters- text use and rhythmic style. Any piece

of singing uses either the text, *ākār*, *sargam*, *nom-tom* or other syllables to articulate the melody- this accounts for one half of the definition of development techniques. The rhythmic style largely determines whether the development may be described as *ālāp*, *bāñṭ*, *banāo*, or *tān*. This rhythmic style itself is determined by a number of factors, of which the most important is the relation of text or other syllable to the articulation of notes, which lies on a syllabic- melismatic continuum. Other factors such as rubato, syncopation and so on are unlikely to affect the definition of techniques in this context.

Moreover, since unlike text use, rhythmic style cannot be easily and objectively defined, the definitions of these categories (*bāñṭ*, *tān* etc) vary between musicians, as do the distinctions between categories. This confirms the point made earlier, that definitions of development technique cause as many problems as they solve in analysis, and although it is important to be aware of these categories, one must also be prepared to resolve development techniques into rhythmic parameters.

Instrumental development techniques may be even harder to define, without the information provided by the text use. They may also be defined by rhythmic style however, and by a number of other factors. One important difference between vocal and instrumental development is that neither can the latter be defined by text use, nor is it either generated or limited by that factor. Thus the logic of instrumental development tends to be more explicitly the logic of rhythmic variation per se. Moreover rhythmic techniques such as stroke doubling are more easily effected, since the soloist does not have to find text syllables with which to articulate the new notes thus generated. A wide range of examples from instrumental performance is introduced in chapters 7 & 8.

#### 4.4.3: Summary

It is not possible to describe and analyse every rhythmic pattern likely to be encountered in Hindustānī music. The purpose of this chapter has been to set the analysis of surface rhythm in the context of performance practice, identifying key rhythmic parameters.

Since the distinctions between development techniques, like those between genres and forms, are often blurred in practice, this contextualisation is best achieved by reference to a number of common features of performance practice. The most important of these are

the episodic organisation of performance, and the tendency to acceleration. Likewise in rhythmic analysis an awareness of the application of categorical terms within the tradition may be complemented by analysis with reference to a number of rhythmically important performance parameters, notably text use and rhythmic style.

The *bandiś* is of fundamental importance in *nibaddh* forms, since besides making up a substantial proportion of the performance it provides material for the development that follows. The structure of the *bandiś*, and its relationship with the structure of the *tāl*, are therefore of great rhythmic importance. Important issues in this respect include the overlapping or syncopation of the melodic rhythm with respect to the *tāl* structure (including the use of a *mukhṛā*); text distribution and the limited influence of verse metre; rhythmic style; and the variation of *bandiś* structures in performance.

A loose conceptual distinction between *rāg*-oriented and rhythm- and/or text-oriented development proves useful in discussing improvised development, since these two categories must be analysed with respect to different terms of reference. However in practice this conceptual boundary is often crossed, particularly in *khyāl* performance. In the latter category (rhythmic/textual development), a number of development techniques may be recognised, although once again the boundaries between them are not clear and one must frequently have recourse to analysis of primary rhythmic parameters.

This chapter has therefore put the analysis of surface rhythm- and of the *laykāri* techniques described in the next chapter in particular- in a logical context. While only a small proportion of the possible rhythmic patterns has been considered explicitly, this contextualisation applies to the rhythm of the classical tradition as a whole. The illustrations represent sample analyses, just as the study in Section II comprises an example of the many possible rhythmic studies which might employ the theoretical models outlined in this thesis.

## Chapter 5: Laykāri: rhythmic variation

Chapter 4 dealt with general questions of performance practice and development technique in North Indian music. The consideration of *nibaddh* forms concentrated on the *bandīs* and its structure, *rāg* development, and rhythmic and/or textual development in turn; discussion of specifically rhythmic techniques was, however, largely saved for this present chapter.

The focus of chapter 5 is therefore, the use of conscious rhythmic variation or development techniques, which are employed when rhythm is the focus of performance. These techniques, of which there are many, may be described under the heading “*laykāri*”. This chapter will define *laykāri* and describe the most important techniques in a logical order; it will also relate techniques to genre, stage of performance, *tāl* and *lay*, and their dependence on the parameters outlined in chapter 4- building on the theoretical discussion of previous chapters.

### 5.1: The concept of *laykāri*

Any technique consciously aimed at varying or developing rhythm, may be thought of as an aspect of ‘*laykāri*’- a word which has, like the related term *lay*, a variety of both general and specific senses. The term *laykāri* is in fact derived from *lay* - which meant originally the space or rest between beats, and has come to mean tempo, rhythmic density, and by extension simply ‘rhythm’ in many contexts (cf. ch. 3).

*Laykāri* has a similar, if not greater, semantic range. It means primarily either (a) variation of *lay* ratio (including acceleration), or (b) the distortion of, or deviation from a steady beat (ie. syncopation, rubato); both these senses derive from the root *lay* (see above) + *kāri* (action, deed).<sup>1</sup> By extension of these senses, *laykāri* applies to (c) any technique dependent on or derived from the division of the *tāl* and variation of the speed level (ie. rhythmic grouping and cross-rhythmic accenting, permutation of rhythmic patterns and so on); and hence (d) rhythmic variation in general (this sense is analogous to the general sense of *lay* itself).

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<sup>1</sup>*Kāri* is defined as “a suffix denoting performance of an act or a doer”, see Chaturvedi and Tiwari [1986:132].

*Laykāṛī* is an aspect of performance process in development, and may not be divorced from that context. Moreover since acceleration (of rhythmic density at least) is an important aspect of performance practice, *laykāṛī* as rhythmic variation is often dependent on the process of *laykāṛī* as increase in rhythmic density. Most aspects of *laykāṛī* are thus dependent at least conceptually on the idea of a *tāl* performed at steady tempo.<sup>2</sup> *Laykāṛī* is not an alteration in the rate of succession of the *tāl*; one of its most important aspects is, on the contrary, the increase in rhythmic density by stages relative to the *tāl*'s notionally stable tempo.

Belonging to the same conceptual structure is the idea that notes are dependent on syllables; and that those syllables may in principle be added, subtracted, multiplied, divided or permuted within the *tāl*'s metric framework. Thus there is a clear association between the division-based *laykāṛī* techniques and syllabic style. These ideas may be traced back a long way in Indian musicological thought; they may also be demonstrated in much of the modern North Indian music discussed in this work. Not all North Indian music operates according to these concepts, but we tend to find a usage of division-based *laykāṛī* techniques in many genres, especially in *dhrupad-dhamār*, instrumental *gat*, and percussion and *kathak* dance repertoires. Many of the techniques described below are more typical of South Indian than they are of Hindustānī music. They are however used increasingly in the latter, especially in modern instrumental styles, as North Indian musicians incorporate techniques from South India and from percussion repertoires (and thus perhaps indirectly from *kathak* dance).<sup>3</sup>

In considering the various *laykāṛī* techniques, it is worth bearing in mind that the application of those techniques is constrained by absolute rhythmic density. In effect, *laykāṛī* techniques are used to create interest in different ways in different contexts, depending on the rhythmic density. At low densities, interest is created by the combination of *bols*, by rhythmic variety, ornamentation, syncopation and rubato. At higher densities, interest is created by speed itself, and by variation of accents (including cross-rhythmic accenting). Thus while *laykāṛī* may be understood in some cases as a process of

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<sup>2</sup>Cf. 1.4.2.

<sup>3</sup>See Section II.

acceleration, taking the music from low to high rhythmic densities, we must also note that the techniques employed vary according to the stage reached within that progression.

The most important *laykāṛī* concepts involve, in brief;

- ‘Divisive *laykāṛī*’; ie. the variation of *lay* ratio (including acceleration),
- Rhythmic grouping and patterning,
- Ordering and manipulation of rhythmic groups; including repetition, permutation (*prastār*), ‘shape’ (*yati*),
- Cadential techniques; especially varieties of *tihāī* (triple repetition).

## 5.2: Techniques of *laykāṛī*

The following section will introduce the most important *laykāṛī* techniques in a logical order. Since many such techniques are dependent on the division of the *tāl*’s pulse (ie. increase in *lay* ratio and rhythmic density), the basics of this practice of division, and terminologies for the different types of division, will be introduced first (5.2.1).

The next most important element in such ‘divisive’ *laykāṛī* is the grouping of rhythmic pulses: rhythmic groups may be inferred spontaneously by the listener, or a grouping pattern contrary to that of the *tāl* may be established by the performer- usually by means of dynamic accents. These rhythmic groups may be subdivided or added together to generate rhythmic patterns which, when repeated, take on the character of a metre or ‘*chand*’ (5.2.2). Furthermore, rhythmic groups may be manipulated by permutation, repetition and so on, or organised according to special principles of *yati* or ‘shape’ (5.2.3); these then are the principal division-based techniques. Cadential techniques play an important part in North Indian rhythm, since they have an important role in performance practice- as in the well known process of triple repetition, called *tihāī*- and can often be regarded as another aspect of *laykāṛī* (5.2.4).

### 5.2.1: Divisive *laykāṛī*: definition and variation of *lay* ratio

The term *laykāṛī* certainly means many different things in different contexts, but the most common usage is to denote any type of rhythmic play involving a change in rhythmic

density or *lay* ratio (eg. the density of notes may increase from 2 per *mātrā* to 3 per *mātrā*, the *lay* ratio from 2:1 to 3:1).<sup>4</sup> Such procedures may be considered from a number of different perspectives. Firstly, the change in speed level (this level or ratio is itself often referred to as ‘the *laykāri*’, but in this thesis is termed ‘*lay* ratio’ to avoid confusion) implies a focussing on the rhythmic aspect of development, and tends to be accompanied by one or more rhythmic manipulation techniques; secondly it may be considered in the context of the widespread tendency of acceleration in Hindustānī music performance practice (see 4.2.2).

Thus the process of increasing the *lay* ratio by steps, with respect to a relatively stable tempo, not only constitutes rhythmic variation in itself and provides a context for further manipulation techniques; it is also one method of achieving the required increase in rhythmic density, and may provide the link between low density and high density development techniques. Thus for example in Maihar *gharānā* practice the development of the *vilambit gat* generally includes a passage of stepped increases in *lay* ratio, which effectively links the low density, melismatic *vistār* with the high density, syllabic *tāns* (see ch. 8).

The division of the *mātrā* (and *tāl* cycles as a whole) into shorter time units and and faster pulse rates, and the association of this process with increase in rhythmic density in development, are basic to Indian rhythmic theory, and to rhythmic practice in many genres, both vocal and instrumental. This technique of ‘divisive *laykāri*’ is best explained in terms of metric structure, as introduced in chapter 1.

The basic theoretical *tāl* structure has three metric levels, the *āvart*, *vibhāg* and *mātrā*.<sup>5</sup> In practice, as was demonstrated in chapter 3, the principal perceived pulse may shift from the *mātrā*- to the *vibhāg* or other lower levels at high tempi, or to the 1/2 or 1/4 *mātrā* level at low tempi (see 3.1.1). These are metric levels which define the underlying metric structure of the music: there must be at least two in any metric pattern; there are usually three and sometimes more in practice in Hindustānī music.

In North Indian music’s most syllabic styles, the surface rhythm is clearly defined with respect to this metric structure. In the type of *laykāri* considered in this section, the

<sup>4</sup>Cf. fig 1.5.

<sup>5</sup>Cf. 1.4.1.

surface rhythm is largely generated by a further division of the highest metrically significant level or 'beat'<sup>6</sup>- typically the *mātrā*, but often a 4-, 2-, 1/2- or 1/4-*mātrā* division. The most common levels of division of this beat lie between 1:1 and 8:1 (although they may exceed this in exceptional circumstances, or drop below one note per beat in music of fast metric tempo). The range of divisions is limited by practical considerations- for example rhythmic density rarely exceeds 400 *bol*s/min in vocal music or 650 *bol*s/min in instrumental<sup>7</sup>, due to physical limitations- and the choice of division depends partly on the degree of rhythmic complexity intended by the artist.

This 'supra-metric' pulse level, generated by division of the *mātrā* and forming the basis of surface rhythm in *laykāri*, may be represented in dot notation form by a row of dots placed above the grid representing the metric structure, as follows;

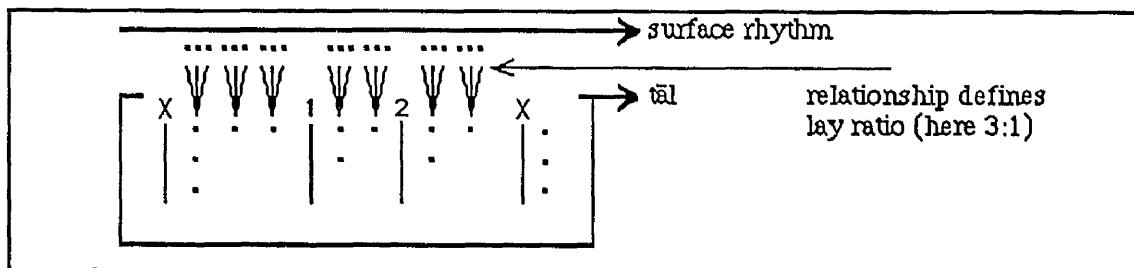


fig 5.1: An illustration of the relationship between *tāl* and surface rhythm in 'divisive *laykāri*'.

Having outlined divisive *laykāri* in principle, we must consider both its terminology and usage; and a special and rarely used technique of 'diminution' called *lay bāñṭ*.

### Terminology

The terminology of *laykāri* is diverse, and can work in one of two ways. Firstly, *laykāri* may be defined simply by the rate of subdivision of the *mātrā* (or to be more precise, of the 'beat'). Most of the terms in the second column below are everyday Hindī words for double, triple and so on: '*dugun*', for example means double, and in most cases implies playing 2 notes per *mātrā*.<sup>8</sup>

The other way of reckoning *laykāris* is more qualitative, and involves classification according to the type of rhythmic subdivision (is it a multiple or fraction of 3,4,5,7 or 9

<sup>6</sup>Lerdahl and Jackendoff's 'tactus', the effective metric pulse rate. See 1.4.1.

<sup>7</sup>Cf. 3.2.2.

<sup>8</sup>In practice, *dugun* means one or more of three things: either 2 pulses per *mātrā*; 2 pulses per beat; or double the preceding density. These often amount to the same thing, but where they do not there is some potential for confusion.



times?), which avoids the possibility of confusion over the identity of the 'beat'. This quality is called the *jāti*, and there are five recognised *jātis*; *tryaśra* or *tīśra* (division into multiples or fractions of 3), *caturaśra* (of 4), *khaṇḍa* (of 5), *miśra* (of 7) and *saṅkīrṇa* (of 9). This system of terminology is more common in South Indian music, but is also employed in the North Indian tradition. There is also a third way of naming *laykārīs*, according to a principle related to that of *jāti*. Here any binary subdivision is *barābar*, the ternary subdivisions are *ār* (or *ārī lay*<sup>9</sup>), quintal subdivisions are *kuār* (*-ī lay*) and septimal *viār* (*-ī lay*).<sup>10</sup> These terminologies are compared as follows<sup>11</sup>;

Laykārī terminology <sup>12</sup>			
pulse rate	relative speed	lay	jāti
1:2	<i>thāh</i>	<i>barābar</i>	
3:4	<i>paunegun</i>	<i>ār</i>	<i>tīśra</i>
1:1	<i>ekgun</i> <sup>13</sup> , <i>thāh</i>	<i>barābar</i>	
5:4	<i>savāgun</i> , <i>savāi</i>	<i>kuār</i>	<i>khaṇḍa</i>
3:2	<i>derhgun</i> , <i>derhī</i>	<i>ār</i>	<i>tīśra</i>
7:4	<i>paunedugun</i>	<i>viār</i>	<i>miśra</i>
2:1	<i>dugun</i>	<i>barābar</i>	<i>caturaśra</i>
5:2	<i>arhāigun</i>	<i>kuār</i>	<i>khaṇḍa</i>
3:1	<i>tigun</i>	<i>ār</i>	<i>tīśra</i>
7:2	<i>sārhetigun</i>	<i>viār</i>	<i>miśra</i>
4:1	<i>caugun</i>	<i>barābar</i>	<i>caturaśra</i>
5:1	<i>pāñcgun</i>	<i>kuār</i>	<i>khaṇḍa</i>
6:1	<i>chegun</i>	<i>ār</i>	<i>tīśra</i>
7:1	<i>sātgun</i>	<i>viār</i>	<i>miśra</i>
8:1	<i>āthgun</i>	<i>barābar</i>	<i>caturaśra</i>
9:1	<i>naugun</i>		<i>saṅkīrṇa</i>
12:1	<i>bārahgun</i>	<i>(mahā-)ār</i> <sup>14</sup>	<i>tīśra</i>

fig 5.2: Three types of terminology describing division of the *tāl* in *laykārī* (cf. fig 3.3).

*Laykārīs* may also have yet another type of designation, if the rhythmic pattern corresponds to the *chand* (accentual pattern) of another *tāl*. To play *jhaptāl* style phrases (grouped 2323) against a *tintāl* framework is called '*jhaptāl chand*', and similarly there are *ektāl*, *rūpak*, *dīpcandī* and *dhamār chands*.<sup>15</sup>

<sup>9</sup>Some musicians take *ārī lay* to mean, not 'triplet rhythm', but uneven rhythm without a simple mathematical relationship with the *tāl*. See Gottlieb [1977:204], and *viṣam*, below.

<sup>10</sup>Literally, *barābar* = even, *ār* (*ārā*) = oblique, *ku-* = deficient, *vi-* = intensified [Chaturvedi and Tiwari 1986].

<sup>11</sup>Gottlieb clarifies much of the terminological confusion. A similar chart appears in his work [1977:45].

<sup>12</sup>Gottlieb uses the term "darja of lay", i.e. levels or classes of *lay*, for these different divisions [1977:45].

<sup>13</sup>'*Ekgun*' according to Gottlieb: Srivastav gives *thāh* (lit. depth) for this category [1980:51].

<sup>14</sup>Gottlieb also gives the following; *mahā-kuār* (10x) and *mahā-viār* (14x) [1977:44].

<sup>15</sup>Kippen quotes his Ustād, Afaq Hussain of Lucknow *bāj*, giving four *chand* categories; *jhaptāl chand* (1,2 or 4 *mātrās* into 5 parts), *dādrā chand* (into 6 parts), *rūpak chand* (7 parts) and *kaharvā chand* (8 parts) [1985:426]. See also Ghosh [1968:66].

Not only are these sets of terminologies used, but so too are a handful of idiomatic terms, by different schools. Thus a quintal division (*khaṇḍa jāti*) may be called '*jhampak*', and a septimal division (*miśra jāti*) '*jhūlnā*'.<sup>16</sup> The *Pañjāb tablā bāj* call one type of division into 7s '*gīt aṅg*'<sup>17</sup>, while the *Banāras bāj* have yet more terms; Kishan Maharaj apparently uses '*kuār*' for divisions of 9, in which case '*savāī*' is used in its place for 5s. Other Banāras terms include *bartha* for the division into 9s and *padma āṛ* or *divya saṅkīrṇa* for 11s.<sup>18</sup> Even *laykārīs* not listed here may be attempted, 5:3, 7:5 and so on, but they are so rare as not to warrant specific designations.

### Usage

Divisive *laykārī* has an important role in acceleration and performance process in general, in several genres. These include in particular *dhrupad*, *dhamār*, the more syllabic *khyāl* styles, instrumental *gat*, solo *tablā* and *pakhāvaj* and *kathak* dance. Although overall, a wide variety of levels may be employed, in any single performance it is rare that one hears more than three or four different levels (eg. 2:1, 3:1 and 4:1; or 2:1, 4:1, 6:1 and 8:1). Divisions into 5 or 7 parts (*khaṇḍa* and *miśra jātis*) are rare,<sup>19</sup> and those into 9 (*saṅkīrṇa jāti*) exceedingly so. The use of five or more levels in one performance is somewhat unusual, although more common in instrumental than vocal music.

The following performance schemes highlight passages of divisive *laykārī*, and the different levels employed: examples of this technique in transcription follow below. The first is taken from a *dhamār* performance, and illustrates how the divisive *laykārī* is used to accelerate the rhythmic density dramatically against a relatively stable tempo.

<sup>16</sup>These terms from *dhrupad* singer Nimai Chand Boral, via Widdess (pers. comm.); *jhūlnā* is also mentioned in Gottlieb [1977:42].

<sup>17</sup>The *Pañjāb bāj* recognises 2 different styles of *miśra jāti* (septuplet) rhythms; *gīt aṅg*, where one *mātrā* is divided into 7 equal parts with no *bakra* cross-rhythms, and *dīpcandī chand*, where the groups of 7 create cross rhythms when set against groups of 4 or 8 *mātrās* [Gottlieb 1977:62, 82].

<sup>18</sup>See Gottlieb [1977:42-43].

<sup>19</sup>The use of *laykārīs* employing divisions of 5 and 7 particularly, has in some cases been influenced by the South Indian practice called "*gati (bheda)*" and "*naḍai svārā*". This is particularly true in the case of Maihar *gharānā* instrumental styles. Frishman writes of South Indian music "The term *gati* or *naḍai* indicates the pulsing, ie. the number of *mātrās* in each *akshara* of an *avart*. There are five varieties of *gati*" [1985:12]. Nb. the different usage of terms in Karnatak music, where "*akṣara*" is the equivalent of the Hindustānī "*mātrā*", which is used here for the supra-metric pulse, for which North Indian music has no generally accepted term. Cf. Shankar [1974:90], Brown [1965:13] and Sambamoorthy [1964:100].

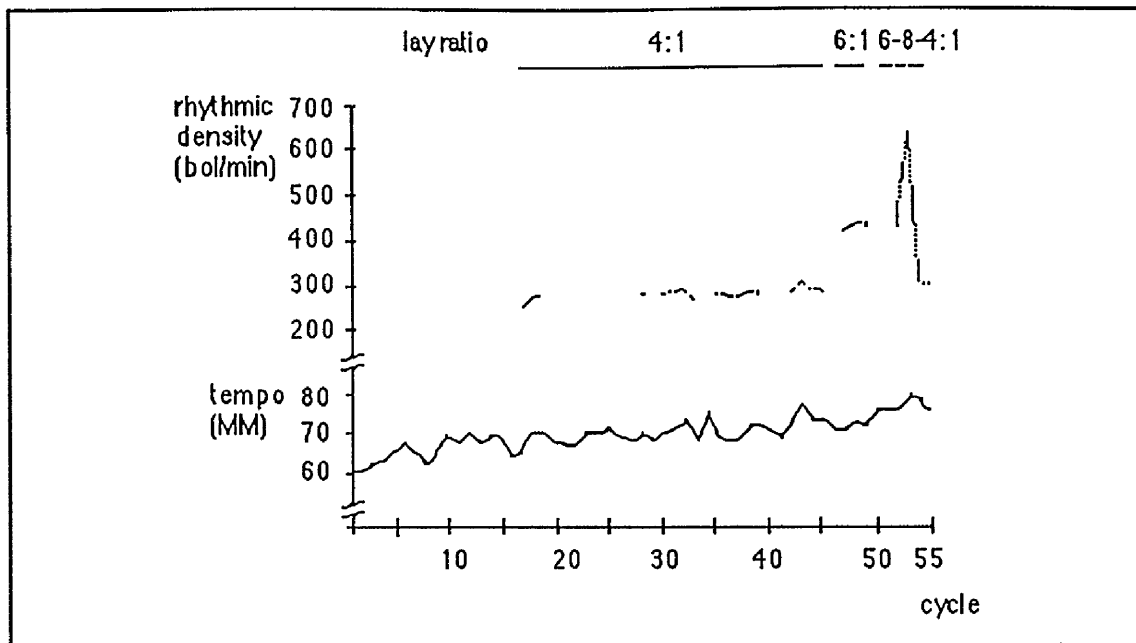


fig 5.3: An illustration of the role of 'divisive' *laykāri* in accelerating rhythmic density—from a *dhamār* performance by Vidur Malik of *rāg jayant malhār* in *dhamār tāl*.

A similar process is illustrated in the following *vilambit gat* performance. The *lay* ratio increases from 6:1 to 12:1 while the tempo remains stable, then falls to a typical *tān* level of 8:1, allowing the tempo itself to increase in the latter part of the performance.

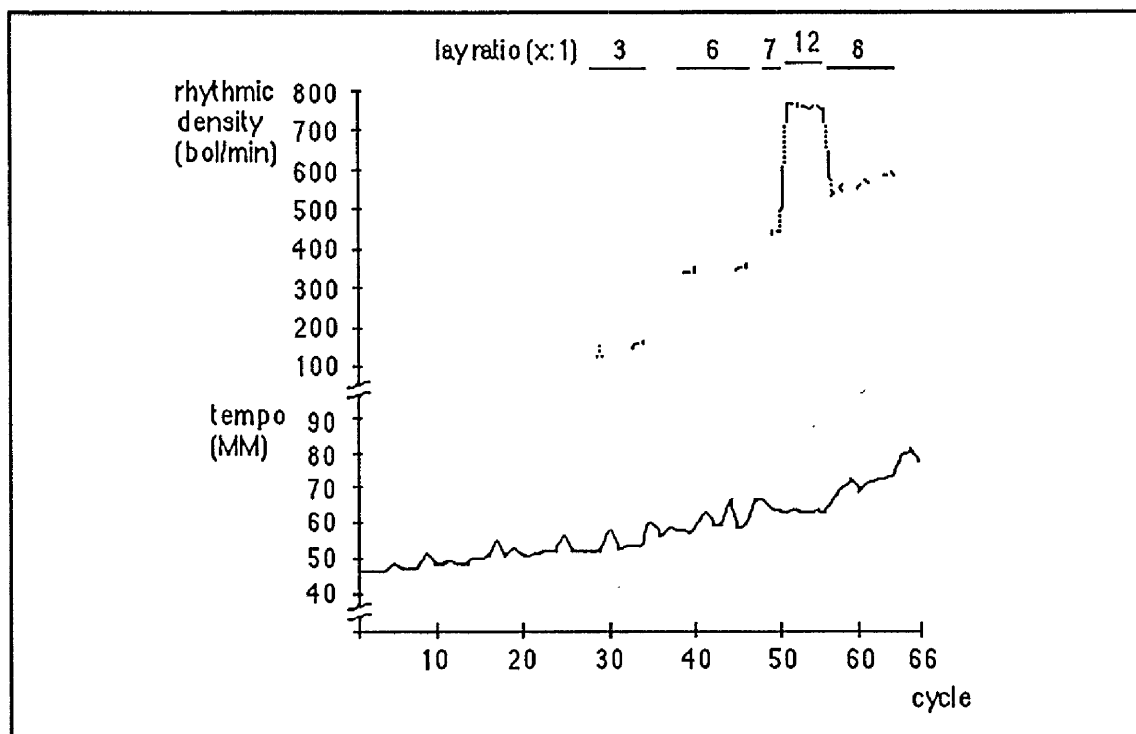


fig 5.4: An illustration of the role of 'divisive' *laykāri* in accelerating rhythmic density—from a *sitār vilambit gat* performance by Ravi Shankar of *rāg khamāj* in *tīntāl*.

### Lay bāṇṭ

*Lay bāṇṭ* is a special technique involving diminution of the *bandiś* to double, triple and/or quadruple speed within an unchanging *tāl* structure.<sup>20</sup> It is extremely rare in practice, since it is really appropriate only to the syllabic *bandiś* structures encountered in *dhrupad*, yet the most famous *dhrupad* performers (namely the Dagar family) regard *lay bāṇṭ* as too contrived a technique to use in performance.<sup>21</sup> *Lay bāṇṭ* is nevertheless heard on occasions, particularly in the singing of Darbhanga style *dhrupadiyās* such as Vidur Malik.

#### 5.2.2: Rhythmic grouping

The definition of the *lay* ratio- and hence the underlying rhythmic density level of surface rhythmic patterns- is an important aspect of North Indian syllabic rhythm. Besides this division of the *tāl*, and changes in the rate of division, many *laykārī* techniques are employed- involving repetition and permutation in particular- which are dependent on the establishment and recognition of rhythmic groups, patterns and phrases.

The study of rhythmic patterns has always presented a problem in Western musicology, where the common urge to devise a system to reduce all rhythm to a finite number of primary patterns (analogous to the Greek system of poetic feet) has remained unfulfilled.<sup>22</sup> It is similarly inappropriate to attempt to devise such a classificatory system for Hindustānī music. Even if one were to limit oneself to rhythm built up of simple syllabic blocks whose place in the metric scheme is unambiguously defined, such a classification would be at best irrelevant to the real musical processes involved, and probably impossible to construct in any case.

In this context it is most profitable to look at how and why rhythmic groups are formed, taking the undifferentiated stream of pulses generated by the division of the *tāl* as a starting point. Similarly we may consider how these groups may be combined into larger

<sup>20</sup>Comparable to the South Indian technique of *trikāla(m)*, playing compositions or phrases at three speed levels. See Shankar [1974:98], Brown [1965:14] and Widdess [1977].

<sup>21</sup>Sanyal (pers. comm.).

<sup>22</sup>The best known of such attempts, which actually employed this Greek system of prosody, was of Cooper and Meyer [1960]; subsequent writers have almost invariably considered the method inappropriate (see eg. Lerdahl and Jackendoff [1983:26-7] and Kolinski [1973:495]). As Yeston writes, "A theoretical basis for determining a finite number of primary rhythmic patterns such that any other design must be an aggregate of two or more of these patterns has never been adequately specified" [1976:12]. See however Kaufman's reference to three named rhythmic patterns- although his source is not clear, and one of the three certainly contains an error [1967:262].

blocks or phrases; and how the stream of pulses may be broken up by either rests or sustained notes on the one hand, or by further subdivision on the other, to produce more complex rhythmic patterns. It will then be possible to consider the various operations which may be carried out on rhythmic groups, patterns or phrases in *laykārī*.

One important implication of this analytical approach is that rhythmic patterns composed of notes or syllables of different lengths, are best analysed not as a sum of different note values (as would perhaps be the most likely Western interpretation), but rather as a transformation of an undifferentiated rhythmic stream.<sup>23</sup> This is a valuable perspective without which much Hindustānī rhythm would appear more complex than it is in essence. (It is also a perspective which might be missed, particularly by those not accustomed to an Indian musical context and/or over-accustomed to the perspective of Western music's staff notation.)

Western notation implies in principle a succession of notes of various lengths; Indian *sargam* notation is less precise rhythmically, and generally defines only the articulation point of a syllable, and the time elapsing before the next such articulation. This reflects the fact that whether a note is prolonged or followed by rest is of secondary importance: the point at which the syllable begins (and therefore is fitted into the metric scheme), is primary, and the rest or sustain which follows is essentially the lack of articulation of the following pulse.<sup>24</sup>

Thus the aim here is to look at the ways in which an undifferentiated pulse stream (as generated by the division of the *tāl* described above) may be transformed into a complex of rhythmic patterns. The processes on which we must focus are grouping (and the use of dynamic accents in defining groups); the organisation of groups into phrases and the division of phrases into groups<sup>25</sup>; the use of unarticulated pulses (rests) and the subdivision of certain pulses.

<sup>23</sup>This implies a principle of one fundamental time unit in surface rhythm patterns. Studies of Western Classical music find that in most analysed pieces 2 note lengths predominate, of which one is usually double the other (see eg. Fraisse 1978:243). This may also be the case in much Indian music; but while there are cases- as in the syllabic settings of some *bandīś* texts- where syllabic quantity determines a distinction between long and short notes (cf. 4.3.3), in most syllabic rhythmic development it is clear that patterns are generated by transformation of a uniform underlying pulse level- ie. by doubling or omitting notes.

<sup>24</sup>Cf. Frishman on South Indian music 'A *kārvai* is a rest or a gap, also thought of as an unspoken syllable' [1985:15].

<sup>25</sup>The term 'group' is used here to refer to patterns of notes of equal length- usually 2, 3 or 4- which may be combined or transformed into longer and/or more complex 'phrases'.

The first step in this transformation is the definition of rhythmic groups within a pulse stream. This fundamental process, without which many more complex *laykāri* techniques would be meaningless, arises out of a natural psychological tendency to group rhythmic impulses. Psychological research has shown that listeners spontaneously divide “even a uniform series of clicks” into rhythmic groups [Dowling and Harwood 1986:180]; and that in a musical context this subjective grouping plays a practical role in helping memorisation of melodic patterns.<sup>26</sup>

Given such an overwhelming tendency to subjectively group any sequence of rhythmic impulses, how much greater is that tendency when these impulses have been generated by division of *mātrās*; the conceptual organisation of pulses into groups coinciding with the *mātrās* is a simple matter, and this forms in practice a kind of ‘default’ grouping structure in *laykāri*.

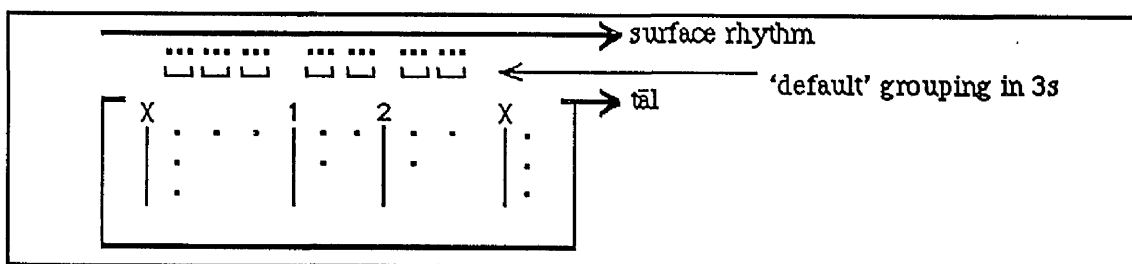


fig 5.5: An illustration of a ‘default’ grouping pattern for surface rhythm pulses in divisive *laykāri*.

With grouping determined by the *mātrā* divisions (patterns derived in this way are described as *sīdhā*, lit. straight), the place of dynamic accent in defining grouping structure is minimal. As Kolinski pointed out, recurrent accents often emphasize metric organisation but do not generate it [1973:495]. In this context, dynamic accents may be used to emphasize the fact that grouping follows the *mātrā* division, but such accents are not necessary since that grouping will be inferred by listeners in any case. Dynamic accent does play a far more important role in defining grouping, where that grouping runs contrary to the *mātrā* division (called *bakra*, lit. crooked): in this case the first of each group is dynamically emphasized.<sup>27</sup> Thus if the ‘default’ grouping in 3s of the *tigun* example above is to be disrupted, it is done by dynamic accent<sup>28</sup>;

<sup>26</sup>See Dowling [1973].

<sup>27</sup>This again is determined by psychological factors: Mursell writes that when an accent is produced by intensity, it is perceived at the beginning of a “unit group” [1937:172]. He goes on to contrast dynamic with



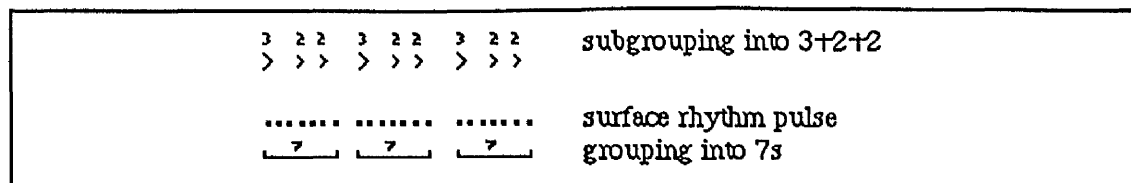


fig 5.8: An illustration of the subdivision of 7-pulse groups into a pattern of 3+2+2, generating a two-tier grouping structure.<sup>31</sup>

An interesting factor emerges in these cases: where a particular grouping is repeated, and that grouping is itself organised into a two-level structure, the organisation of surface rhythmic groups is in effect quasi-metric, and indeed follows principles shared with the structures of the *tāls* themselves.<sup>32</sup> The logical implication of this is that it is possible for a *tablā* player actually to play the *bols* of one *tāl*'s *ṭhekā* within another *tāl*, simply by choosing the appropriate *laykārī* division. This is indeed something practised by many *tablā* players; moreover the use of repeated grouping patterns such as 3+2+2 or 2+3+2+3 in *laykārī* is referred to in the *tablā* repertoire as playing in a particular *chand*, and this *chand* is identified with the *tāl* which shares this grouping structure (see above, 5.2.1).

### Summary

Where a particular rhythmic density level has been generated by division of the *tāl*, this conceptual pulse stream is differentiated, primarily by means of organisation into rhythmic groups. Such differentiation is a psychologically inevitable phenomenon. The stream of impulses is ultimately broken down into groups of 2, 3 and 4 pulses; however it may be divided firstly into larger groups (eg. 5, 7 or 9) and then subdivided (usually iambically), or conversely a number of small groups may be combined to form a larger group.

Any grouping pattern may be defined, by placing a dynamic accent on the first syllable of each group. In the absence of such an accent a 'default' grouping according to the *mātrā* division may be inferred: in the case of longer groups, the 'default' subgrouping will be iambic (cf. *jātis*, ch 3 and above). A repeated pattern of rhythmic groups may be called a *chand*, and this *chand* may be defined by its relationship with a *tāl* sharing the same structure.

<sup>31</sup>For the sake of simplicity, the relationship to the *tāl* structure is not illustrated here.

<sup>32</sup>Such as that of iambic subdivision.



### 5.2.3: Generation and variation of rhythmic patterns

Having established the conceptual framework of division-based *laykārī* in music of syllabic style, we may consider further manipulation or variation processes, looking in particular at how actual rhythmic patterns are created from the conceptual pulse level and its grouping structure. The basic principles are best introduced through practical examples.

Playing at any given *lay* ratio, the artist has the option to play phrases of any length within the cycle, divided by rests (unarticulated pulses) of any length; when he plays he may play a simple rhythmic pattern, consisting of notes of equal length; or he may leave some pulses unarticulated and/or subdivide others; he may play in groups according to the *mātrā* subdivision (*sīdhā*), or use dynamic accents to set up a different grouping structure (*bakra*). Some possibilities which may be encountered at *tigun* (3:1) are illustrated below;



fig 5.9: Various rhythmic patterns generated from a surface rhythm pulse at 3:1 (*tigun*).

Of these examples, (a) demonstrates a simple 'triplet' rhythm generated at 3:1 (*sīdhā*); (b) disrupts this grouping with a dynamic accent (*bakra*); (c) modifies the original pattern with further subdivision; and (d) sustains a note, leaving a pulse unarticulated. The following transcription shows some of these processes in a piece of *khyāl bol bāñṭ* in *tigun*.

$m = \text{J} = 105 \text{ mm}$

c. 106-107

X 0	1	2	3	4	5	6	7	X 0	1	2	3	4	5	6	7
sa-ja	su-ra	tā-la	pa-da	sai-gi	-ta	sā-ḍa	-sa-	rī-ta	an-ta	-ra	prey	kā-ta	sa-ja		

c. 108

su-ra	tā-la	sa-ja	su-ra	tā-la	sa-ja	su-ra	tā-la	

fig 5.10: An illustration of *bol bāñṭ* in *tigun*; from a *khyāl* performance by Veena Sahasrabuddhe of *rāg śrī* in *rūpak tāl*.

A grouping in 3s is adopted at the start, in each case with two syllables sung on the 1st and 3rd of the group<sup>33</sup> (in this instance the 2nd pulse of the group is articulated with the vowel of the preceding syllable). This grouping shifts to 2+2+2; the *tihā* is sung in the original 2+1 grouping, but with the first note held rather than rearticulated with the vowel sound. This example illustrates the remarks on grouping (*sīdhā* and *bakra*) and unarticulated/sustained notes made above.

The next figure again illustrates how a division of the *mātrā* is used as the basis of further manipulation.

$m = \text{J} = 64 \text{ MM}$

c. 27

X		0		2		0		3		4		X
1	2	3	4	5	6	7	8	9	10	11	12	1
(mū)	muraliṇ	kaisā	je, kaise	ḍāje	mura	li yā	kaisā	je, kai	se, kaise	ḍāje, kai	se-ḍā	
		+	+				+	+	+	+	+	

c. 28

je, kai	se, kai	se, ḍā	je	mū	ra	li	yā	kaise	ḍā	je, kai	se, ḍā	je	mū
+	+	+							+	+	+		

+ syncopated accent

fig 5.11: An illustration of *bol bāṇṭ*; from a *dhrupad* performance by the Dagar Brothers of *rāg jaijaivanti* in *cautāl*.

This episode appears to start in *caugun* (4:1), but settles down to *dugun* (2:1) with occasional pulses subdivided. Besides this subdivision, frequent use is made of syncopation, indicated both by dynamic accents and the word breaks. The integration of textual and rhythmic process in *dhrupad bol bāṇṭ* is apparent here.

### Variation and development

Some of the basic means by which rhythmic patterns are generated in syllabic rhythm have now been described. In performance, the rhythmic ideas generated in this way may be varied and developed in a number of ways. For instance, having introduced a particular rhythmic idea, the artist can carry out one of the following operations on it;

<sup>33</sup>Cf. 4.3.3.




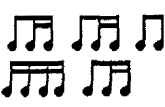

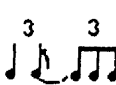



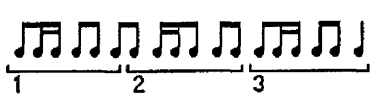




operation	from:	to:
• repeat the phrase (with or without a change of melody)		
• repeat the phrase with rhythmic variation (eg. extended or reduced) (eg. strokes doubled)		
• repeat the phrase at a different <i>lay</i> ratio		
• repeat as above, changing the relationship with the <i>tāl</i> (eg. shifting the whole pattern to the off-beat)		
• repeat as above, manipulating the resultant pattern into a cadential marker such as a <i>tihāi</i> (see below)		
• rearrange the elements comprising the phrase (eg. change a grouping of 322 to 223); this rearrangement or permutation is called <i>prastār</i> <sup>34</sup>		
• arrange rhythmic groups according to principles of ' <i>yati</i> '		

fig 5.12: Examples of some of the most common processes by which rhythmic patterns are modified.

The principles of repetition (with or without expansion, contraction, change of *lay* or change to the off-beat) and rearrangement are self-explanatory or have been explained above<sup>35</sup>; they will be illustrated in the examples which follow, and in Section II. The last of these, *yati*, is less obvious, and deserves a short explanation.

### Yati

*Yati* is an organisational concept, more relevant in South Indian music but still applied in some circumstances in the North Indian tradition. *Yati* is the principle by which rhythmic phrases or other formal elements may be shaped; for example with elements all of equal length, or arranged short-long-short, or in some other arrangement. In South Indian music

<sup>34</sup>Cf. fig 8.16.

<sup>35</sup>Kippen lists the following "methods of rearrangement" (for Lucknow *bāj tablā*): permutation of *bol*s, substitution of *bol*s, repetition of phrases and introduction of gaps [1985:411ff].

the concept applies mainly to rhythmic phrases of different lengths; in North Indian percussion repertoires it applies as commonly to phrases of different *lay*. Frishman gives a list of six *yatis*<sup>36</sup> (based on the South Indian tradition), as follows;

yati	literal meaning	musical meaning
<i>sama</i>	equal	all elements equal length
<i>visama</i>	unequal	all elements different lengths
<i>gopuccha</i>	cow's tail	elements arranged long to short
<i>srotovaha</i>	river	elements arranged short to long
<i>mrīdaṅga</i>	barrel drum	elements arranged short-long-short
<i>damaru</i>	hourglass drum	elements arranged long-short-long

These six classes of *yati* provide a tool for describing arrangements of rhythmic phrases, as used in South Indian music.<sup>37</sup> Two North Indian writers who have mentioned *yati* in a percussion context are Pāgaldās [1967:10-12] and Alkūṭkar [1960:10-11]. Both define *yati* as the organisation of phrases of a different *lay*, rather than length (although any phrase will obviously be shorter at a faster *lay* than it is at a slower one); both give five classes, omitting *viṣama* (which is presumably redundant for their prescriptive purposes). The following list is taken from Alkūṭkar;

yati	literal meaning	musical meaning
<i>samā</i>	equal	elements of equal <i>lay</i>
<i>śrotovahā</i> <sup>38</sup>	river	elements arranged <i>vilambit</i> to <i>drut</i> (slow to fast)
<i>mrīdaṅg</i>	barrel drum	elements arranged <i>drut-vilambit-drut</i>
<i>pipīlikā</i> <sup>39</sup>	ant	elements arranged <i>vilambit-drut-madhya</i>
<i>gopucchā</i>	cow's tail	elements arranged <i>drut-vilambit</i>

Possibly because North Indian music features fewer pre-composed rhythmic variations than South Indian, the place of *yati* in Hindustānī music is very limited. However it does have a place in the percussion repertoire, as we have seen; and in instrumental music to some extent, probably as a result of influence from South India and/or the percussion repertoire (see eg. the *tihāīs* featuring *lay* changes in fig 7.26).

<sup>36</sup>Frishman [1985:13]; *yati* is one of the *tāla dasa prāṇa*, the 'ten vital breaths of *tāl*', often cited by South Indian theorists. See Sambamoorthy [1964:107ff].

<sup>37</sup>See eg. Wade [1984b:42] and Brown [1965:14].

<sup>38</sup>Given as "*śrotogatā*" in Pāgaldās [1967:10-12].

<sup>39</sup>Cf. *damaru* in the table above.

The following example features a *tihāī* in which the phrase is shortened on each repetition- '*gopucchā yati*'- from a performance by Ravi Shankar. This application of a technique typical of South Indian practice indicates that this is one of several areas in which modern Hindustānī music has been influenced by South Indian rhythmic techniques.

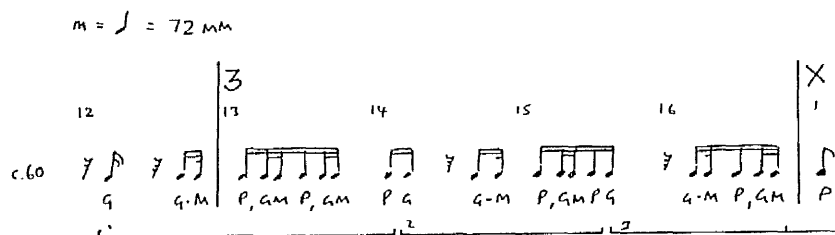


fig 5.13: An example of '*gopucchā yati*', from a *vilambit gat* performance by Ravi Shankar of *rāg khamāj* in *tintāl*.<sup>40</sup>

#### 5.2.4: Cadential techniques

The importance of cadential patterns in North Indian rhythm has been noted above on several occasions. Development in *nibaddh* forms is largely improvised within *tāl* structures, and organised into episodes punctuated by refrains (see 4.2.2); in this context cadential patterns often provide a link from improvisation back to the refrain. They also- in melismatic styles- often help to reestablish the relationship of surface rhythm with the *tāl*.

The cadential pattern is in effect an anacrusis, which prepares the listener for the emphasised beat which follows; this may be achieved in a number of ways. A cadential effect may be achieved by an increased use of syncopated accents before *sam* (see eg. fig 5.11, c.28/ m.9-12). In some styles, performers simply use the *mukhrā* as a cadence, and either end their improvisation before the *mukhrā*, or perhaps elide with its start (cf. 8.3.3). Often however, specialised idiomatic techniques are employed. The most common of these involve phrases played three times, which are called *tihāīs* (lit., *tihāī* = one-third).<sup>41</sup>

#### Tihāī

The most common form of cadential pattern is the *tihāī*: a rhythmic phrase<sup>42</sup> played a total of three times, constructed so as to end at a structurally important point in the *tāl* cycle (usually on *sam* or just before the *mukhrā*). The *tihāī* in its simplest form is an exact triple

<sup>40</sup>The notes of the melody (Ga, Ma, Pa) are given here to clarify the grouping structure, and hence the relationship between the elements.

<sup>41</sup>Also called *tīyā*.

<sup>42</sup>The phrase is called a *pallā* in the *tablā* repertoire. See Gottlieb [1977:63].

repetition of melodic, textual and rhythmic material. It is not uncommon in practice however, for one or more of these parameters to be varied (including the rhythm itself in improvised *tihāīs*, as the artist strives to ensure that the pattern will end at the correct point).

There is no limit on the length or complexity of a *tihāī*; for example they are used in conjunction with divisive *laykārīs*, and with syncopation (a common variety features a shift of accents to the off-beat for the second element, returning to the beat on the third). The use or absence of rests between elements is also a factor- *tihāīs* with no rest between elements are called *bedam* (lit. without breath), those with rests are *damdār* (lit. with breath). The only limits are those imposed by the performance practice of particular genres and styles: in music of syllabic style, musicians who are not limited technically in the use of *tihāīs* nevertheless often limit themselves, by choice, as to the frequency and complexity of these patterns.

*Tihāīs* are common in more syllabic styles, but a syllabic rhythmic style does not necessarily imply widespread use of *tihāīs*; for instance, many *dhrupad* singers use the *tihāī* quite sparingly. The *tihāī* is a common feature of percussion solos and of *kathak* dance: it is also particularly common in *horī dhamār*, some *dhrupad*, *khyāl* and *tarānā* styles, and many instrumental *gat* styles (especially in Maihar *gharānā*- see Section II).<sup>43</sup> A simple *tihāī* is illustrated below.

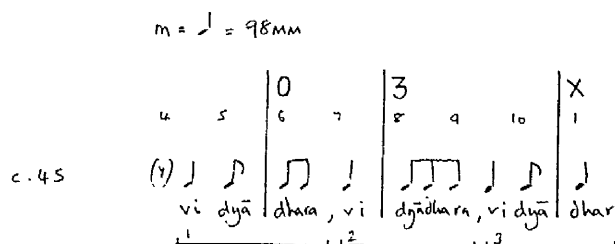


fig 5.14: A simple *tihāī* in *jhaptāl*, from a *sādrā* performance by K.G.Ginde of *rāg khaṭ*.

### Cakkardār and nauhār *tihāīs*

The *cakkardār tihāī* is a special variety, popular in the *kathak* and *tablā* repertoires, in which each element is itself composed of a short *tihāī*, usually preceded by a short introductory phrase. The *tihāī* of each of the first two elements finishes either before or after *sam*, before the third lands on *sam*.<sup>44</sup> *Tihāīs* of this type may also be referred to as

<sup>43</sup> *Tihāīs* are also used in South Indian music, where they are called *morā*.

<sup>44</sup> Cf Gottlieb; "the phrase lengths do not correspond with the divisions of the time-cycle" [1977:51]. See also Brown [1965].

*nauhār*, since they have a total of nine (*nau*) short *tihāī* elements.<sup>45</sup> Examples of these constructions are to be found in figs 7.27-28. The figure below illustrates a *nauhār tihāī*- each element contains a short *tihāī*- it is not however a true *cakkardār*, since the first element also lands on *sam*.

$$M = J = 69 \text{ MM}$$

fig 5.15: A *nauhār tihāī*, from a *dhamār* performance by Vidur Malik of *rāg jayant malhār* in *dhamār tāl*.

Many modern instrumentalists use particularly elaborate forms of *tihāī* to end performances; one such is illustrated below. It begins with a long descending pattern repeated three times, before the *cakkardār tihāī* proper begins. Each element of the *cakkardār* consists of a *tihāī* plus a short rest: furthermore each of these short *tihāīs* contains a triple repetition on high Sa- making a total of 27 Sa's.

<sup>45</sup>Cf. the *tablā*'s '*nau Dhā*' *tihāī*; Gottlieb [1977:63].

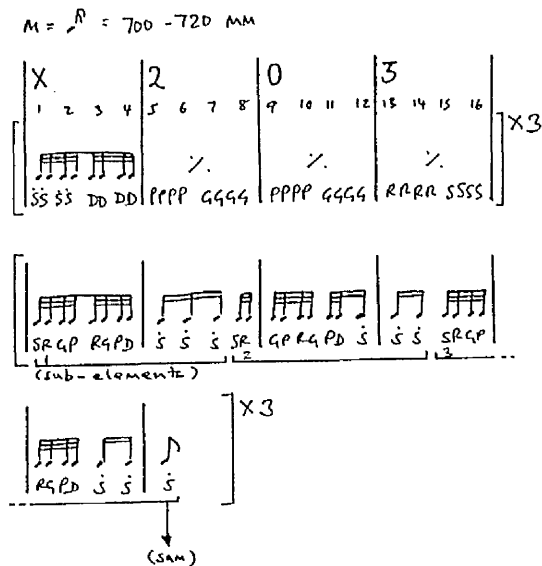


fig 5.16: An ending *tihāi* from a *drut gat* performance by Shiv Kumar Sharma (*santūr*) of *rāg bhūpāl toḍī* in *tīntāl*. The melody is given in *sargam* notation.

Various other forms of *tihāi* will be encountered: those which lead to or elide with the *mukhṛā* rather than landing on *sam* (see 8.3.3); those which intentionally miss *sam* narrowly (see *viṣam*, below); those including changes of *lay* ratio (see fig 7.26); and many instances where improvised patterns are modified in performance to ensure ending on the correct point (see figs 7.19 & 20 in particular). The possibilities are endless, and for those musicians who enjoy the challenge of improvising *tihāis*, there are few constraints on their imagination.

### Sam and *viṣam* in *laykārī*

In most *laykārī*, the soloist's aim is to end a development episode by returning to the *mukhṛā* of the *bandiś*, or by reaching a cadence on *sam*. Some *dhrupad-dhamār* singers however use a technique called *viṣam*, in which improvisations end deliberately just before or just after *sam*.<sup>46</sup> Those ending before *sam* are described as *anāgat*,<sup>47</sup> those which overshoot are *atīt*.<sup>48</sup> The technique is particularly appropriate to *dhrupad* or *dhamār* accompanied by 'sāth saṅgat', where singer and *pakhāvāj* player both improvise simultaneously. In this case the singer may use *viṣam* in order to throw his accompanist

<sup>46</sup>This information on *viṣam* is from the *dhrupad* singer Ritvik Sanyal (pers. com.). The terms *atīt* and *anāgat* are confirmed in this sense by Roychoudhury [1975:2]. Gottlieb however uses the term *viṣam* for irregular (non-binary) divisions of the *tāl* [1977:42]; see also *viṣam yati* above.

<sup>47</sup>Cf Gottlieb [1977:148].

<sup>48</sup>In South Indian music, these same terms are used to describe the starting points of compositions, when they start either before or after the start of the cycle. See Shankar [1974:18] and Frishman [1985:13].



off the *tāl*, in a spirit of friendly competition. Some instrumentalists too use this technique, in deliberately constructing *tihāīs* to end off-*sam* (see fig 7.25).

### 5.3: Further issues in laykārī

#### 5.3.1: Usage of techniques

There clearly exists a wealth of rhythmic variation techniques in North Indian music: these are not and cannot be employed purely at the whim of the artist, but are associated with the aesthetic and technical parameters of genre and style, and must be consistent with development technique, *tāl* and *lay*. In practice, most performances only use a limited selection of the *laykārī* techniques available to the tradition as a whole.

The more syllabic styles tend to use more *laykārī* (ie. *dhrupad*, *dhamār*, medium-fast *khyāl* and *tarānā* use these techniques more than slow *khyāl* and *ṭhumrī*); and in general instrumental *gat* forms, being less limited by the employment of text, use the most *laykārī* of all. At the other end of the spectrum, some *vilambit khyāl* and *ṭhumrī* barely uses any techniques which could be described as *laykārī*, except possibly for rubato.

In vocal genres which do allow extensive use of *laykārī*, usage is largely dependent on that of the development techniques described in chapter 4. For example in *dhrupad* and *dhamār bol bāñṭ* a number of techniques may be accommodated: shifts in *lay* ratio (divisive *laykārī*, and in some cases *lay bāñṭ*) contributing to overall acceleration; rhythmic grouping (here grouping is partly dependent on text distribution) and a limited amount of *prastār*, plus *tihāīs* and *viṣam*.

Thus a variety of techniques may be used, but in practice (especially in *dhrupad*), such techniques will be used only where text allows. The balance is slightly different in *dhamār* than *dhrupad*, and the playful spirit of *horī dhamār* encourages the greater use of *tihāīs* (as in fig 5.15 above). In *tarānā* the singer does not have the same limitations of text use, and can in theory use the full range of *laykārī* techniques: in practice however, many singers perform *tarānā* exactly like *choṭā khyāl*, alternating the *bandiś* with *ākār tāns* and introducing little rhythmic play. *Khyāl* performance may lie anywhere on a continuum

from virtually no *laykārī*, to a use of *laykārī* comparable with *dhrupad* or instrumental *gat* performance. *Vilambit khyāl*, *thumrī*, *dādrā* and *ṭappā* use the least *laykārī* of all.

As we have seen, in instrumental forms the stroke patterns replace text in function as much as possible. Stroke patterns may be manipulated much more freely than text, without semantic limitations: as a result, most modern instrumental *gat* styles (in particular those of Maihar *gharānā* musicians- see Section II), have exploited *laykārī* to a degree impossible for vocalists to emulate. Instrumentalists have borrowed from the percussion and (and, perhaps indirectly, *kathak* dance) repertoires, and from South Indian music, to extend the rhythmic vocabulary of North Indian music: techniques introduced in this way may include the *cakkardār* and *nauhār tihāīs*, *prastār* and *yati*, and to some extent the application of divisive *laykārī* (and certainly its *jāti* terminology).

The following examples illustrate the usage of various *laykārī* techniques in performance. The first is taken from a medium tempo *khyāl* performance, the second from a *vilambit gat* played on *sitār*. Both are performances which use somewhat more *laykārī* than average for their genres, although not so much as to be considered atypical.

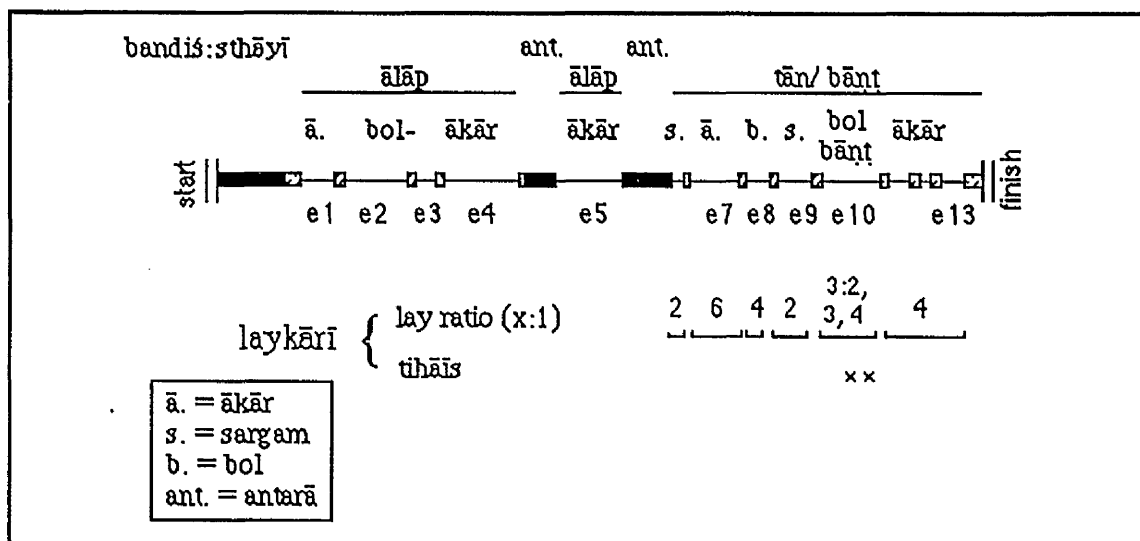


fig 5.17: Performance scheme of a *khyāl* performance by Veena Sahasrabuddhe of *rāg śrī* in *rūpak tāl*, illustrating usage of *laykārī* techniques (cf. fig 4.4).



the composition of a suitable *tihāī*, with which to rejoin the refrain. This is particularly true of *laykāī* in instrumental *gats*; in *dhrupad* the situation is similar but the cadence is less likely to involve a *tihāī*.

Each episode may be subdivided by other cadential patterns into 'sub-episodes' as we saw in chapter 4; these are less likely to involve the *mukhṛā* and more likely to extend to *sam* (in *dhrupad*, sometimes deliberately over- or undershooting; see *viṣam* above). Within each sub-episode the artist has the option of treating the *tāl* cycles in one of several ways;

- Develop rhythmic ideas according to their own logic- or the logic of text distribution- relying on his or her ability to recognise the place reached in the cycle and readjust to the *tāl*.
- Construct rhythmic variations with the *tāl* cycle in mind, ie. multiply the number of *mātrās* (of the whole cycle, or those remaining in the cycle) by the *lay* ratio, in order to find the maximum number of syllables; then devise rhythmic patterns to fill the available space.
- As above, but constructing variations to fill each *vibhāg* in turn rather than the cycle as a whole.

### Computation in *laykāī*

The second and third possibilities above imply the use of some form of computation in order to exploit the rhythmic possibilities of *laykāī*. This is more apparent in the construction of *tihāīs*, where the length of the overall pattern is important, since it must end in a particular place. In theory it is possible to compute the necessary length for the basic element of a *tihāī* ending on *sam*, as follows;

$$\begin{aligned} \text{no. of } mātrās \text{ remaining to } sam \times \text{lay ratio} &= \text{total number of pulses} \\ (\text{total no. of pulses} + 1) \div 3 &= \text{no. of pulses in basic } tihāī \text{ element} \end{aligned}$$

These two simple stages of computation will calculate the length of a pattern which, if played 3 times, will end with its final syllable or stroke on *sam*. For example if a musician wants to fill five *mātrās* at *caugun* (4:1) with a *tihāī* to end on *sam*, he may calculate;

$$5 \text{ mātṛās} \times 4:1 = 20 \text{ pulses}$$

$$(20+1) + 3 = 7 \text{ pulses in } tihāī \text{ element}$$

Therefore, a 7-pulse pattern, without a gap between repetitions (*bedam*) will end on *sam*, after five *mātṛās* in *caugun*, on its third statement. This computation is illustrated graphically below, with an example of a possible *tihāī*:

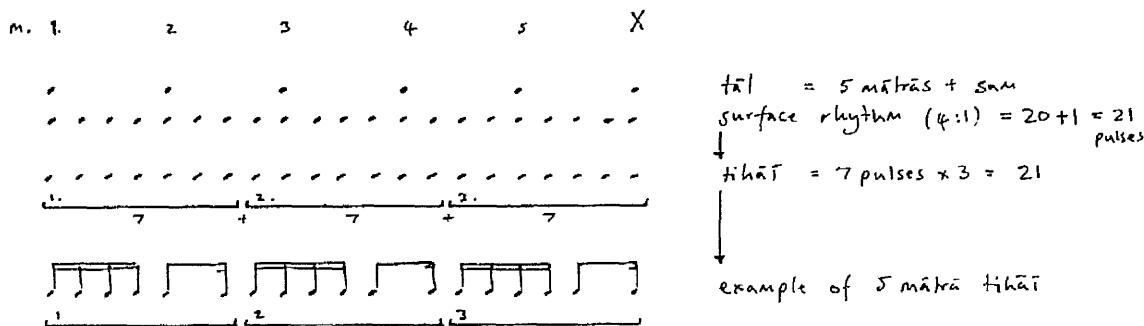


fig 5.19: The use of computation in generating a 5-mātṛā *tihāī* at *caugun*.

While this type of computation may be carried out in performance<sup>49</sup> (or prepared in advance, ie. pre-composed), more often than not musicians either apply patterns with which they are familiar, or adjust or modify familiar patterns in some way.

Musicians who are trained in styles which employ a lot of *laykāṛī*, learn a large number of composed patterns for *tihāīs* from their masters, and hear many more. An experienced improviser of *tihāīs* would therefore not have to make the computation above, since he would know instinctively (ie. through learning, practice and experience), a variety of 5-mātṛā *tihāī* patterns. He would use the knowledge that a 7-pulse pattern works out as a 5-mātṛā *tihāī* in *caugun*, as the starting point of further variation (such as playing a familiar 5-mātṛā pattern over 6 *mātṛās*, using two 1/2 *mātṛā* rests between repetitions).<sup>50</sup> This type of variation and adaptation is more typical of *laykāṛī* in practice than more complicated models of computation: the computation remains analytically important however, since it must have been carried out at some point, consciously or not.

<sup>49</sup>In fact a tradition exists in *tablā* solo performance, in which members of the audience may request the artist to play a particular type of composition- stipulating, for example, the length of a *tihāī*. This is called a *fārmāīś* (commission), and pieces composed in this way are called *fārmāīśī* (eg. *tihāīs*). See Kippen [1985:101], Gottlieb [1977:127].

<sup>50</sup>An example of a 10-mātṛā *tihāī* adapted to a 9-mātṛā *tāl* may be found in fig 7.17.

### 5.3.3: Summary of Chapter 5

This chapter has described the concept and techniques of *laykāri*, and their place in performance. The term *laykāri* has a range of meanings derived from the roots *lay* (see ch. 3) and *kāri* (action). It is most commonly taken to imply the use of one or more rhythmic variation techniques, and describes music in which rhythmic play is a major component.

As we have seen in earlier chapters however, this concept is also associated with a particular 'syllabic' model of rhythmic organisation, in which *laykāri* defines the relationship between *tāl* and surface rhythm. In this context acceleration is effected by an increase in the ratio between surface rhythmic density and tempo- the '*lay* ratio'- and hence *laykāri* is also closely associated with this acceleration process.

The most common type of *laykāri* involves a conceptual and practical division of the *tāl*, which generates a supra-metric pulse level. Surface rhythmic patterns are created by further manipulation of this pulse level; such manipulation involves either variation of the grouping patterns which are inferred on the basis of the *tāl*'s basic pulse level, by means of cross-rhythmic dynamic accents; by further subdivision of this pulse (eg. stroke doubling); or by sustaining notes and/or leaving rests. The rhythmic patterns generated by means of these processes may be repeated, varied, and/or organised by principles such as *prastār* (permutation), and *yati* ('shape').

Cadential patterns play an important role in performance practice (associated with both the improvisatory nature of development, and the cyclicity of the *tāl*); they form, therefore, an important component of *laykāri*. The most common cadential type is the *tihāi*, which is based on the principle of triple repetition (a rhythmic phrase is stated a total of three times, ending usually on a structurally important beat). The *tihāi* has many forms in practice, some highly complex.

Usage of *laykāri* techniques is inseparable from performance practice in general- in particular acceleration (associated with increase in *lay* ratio), episodic structure (with cadential patterns), and text use (with the generation of rhythmic patterns). *Laykāri* must therefore be analysed in this wider context, if its full significance in practice is to be made clear.

## Summary of Section I

The primary aim of the first section of this thesis, as set out in chapter 1, was to show how a synthesis of research methodologies could be employed in developing a comprehensive model of rhythmic organisation for North Indian classical music. The approaches to be combined were those of the participant-observer ethnomusicologist, basing analysis on his understanding of indigenous concepts, categories and terms, and that of the analytical musicologist, prepared to go beyond the theoretical structures previously understood within the culture itself, if by doing so he may deepen comprehension of musical processes.

In effect, the methodology employed here was to take indigenous rhythmic concepts- such as *tāl*, *lay* and *laykārī*- analyse and interpret them, and determine to what extent they were relevant to the music as actually performed. These concepts, as understood in both the oral tradition and musicological literature, thus directed the study and ensured that the analysis was appropriate to this particular music culture, while the objective analysis (including some empirical research) complemented that approach. This analysis helped to make clear that Indian musicological concepts as currently accepted might be less than ideally suited to current musical practice- either because they were formulated in earlier historical periods, and could not accommodate subsequent changes in musical practice, or because they were informed as much by deeply rooted cultural preferences and metaphysical analogies as by the music itself.

As a preliminary step, 1.2 outlined certain key perspectives which were to be referred to in the analysis proper- the oral and written traditions of Indian musicology, relevant cultural symbolisms such as that of cyclic time, the historical development of music, and views of ethnomusicologists and psychologists. By introducing these research perspectives at once, the breadth of the analytical approach was demonstrated. 1.3 outlined conventional *tāl* theory and established that implicit in this theory and its principal concepts was a particular set of assumptions on rhythmic organisation: it was also established that in many vital respects, this implicit model was not consistent with the diverse modes of rhythmic organisation actually to be observed in Hindustānī music.

In response to this, 1.4 built on this 'ideal' model of rhythmic organisation, recognising where historical change had caused a number of modifications in rhythmic

practice- especially in tempo and in the use of the *ṭhekā*. Moreover, it was acknowledged that these changes had different consequences for different genres and different styles of music- in all, three models of rhythmic organisation were set out to accommodate this fact. The first mode (named 'syllabic') was essentially that deduced in 1.3 and implicit in *tāl* theory and terminology; the second ('melismatic') was largely determined by the use of very slow tempi, and appropriate to music of melismatic rhythmic style; the third incorporated a more subtle alteration, in that the use of the *ṭhekā* determines that the syllabic mode, which is basically quantitative in principle, has accommodated the qualitative hierarchy imposed on it by the *ṭhekā*'s accentual pattern.

Finally, all three of these modes of rhythmic organisation were described in terms of a single, unified, model of North Indian rhythmic organisation- one that is sufficiently flexible to accommodate significant variability in its basic parameters. This model (1.4.5) is described as a dual structure- the constituent parts of which are metre and surface rhythm- of which the metric element is essentially a hybrid system. The metric structure, embodied in the *tāl*, combines a quantitative and a qualitative hierarchy. In the quantitative hierarchy, different temporal levels are added together- *mātrās* to form *vibhāgs*, *vibhāgs* to form *āvarts*- and the structure is maintained by means of clap patterns. In the qualitative hierarchy, the *ṭhekā*'s accentual pattern determines that certain beats are felt to be stronger or heavier than others.

A flexible relationship exists between these different types of hierarchy- the *ṭhekā* may for example complement the structure indicated by the clap pattern, or vice versa, or the two may function independently. The two most important variables in this model are the use of the *ṭhekā* and the tempo. If the *ṭhekā* <sup>is</sup> not heard, then the qualitative aspect of the structure collapses. If the tempo is very slow, then the *ṭhekā* loses its accentual importance, and the clap pattern too fails to perform its function, so that the *ṭhekā* is left to perform the quantitative function usually fulfilled by the clap pattern, by means of audible clues (as in the 'melismatic' mode of 1.4.3).

This variable two-part metric structure acts in music as one of the two essential levels of the organisational system. The second of these levels is the surface rhythm, the rhythm actually played by the soloist (and accompanist) in performance. The study of



rhythmic organisation must therefore be concerned both with the nature of the metric structure itself (the *tāl*), and with the relationship between that structure and the surface rhythm organised thereby. That relationship too is highly variable, as later chapters demonstrate.

Thus the work of chapter 1 supplied the theoretical basis of the study, by developing a model of rhythmic organisation in North Indian classical music. The next four chapters built on that foundation, with discussion of key areas of rhythmic practice. Chapter 2 looked at the characteristic features of *tāl* (the clap patterns and *theḱās* in particular), its functions (quantitative, qualitative, and even cyclic), and the relationships between them.

Since the importance of *lay* had already been noted, as one of the central concepts of conventional *tāl* theory, chapter 3 dealt with this in more detail. *Lay* was interpreted both in terms of the ancient and medieval music with which it fits most comfortably, and of the modern music to which it is still applied. It was established that changes in practice- again, the use of very slow tempi proved significant- meant that *lay* had lost much of its original meaning in Indian rhythmic organisation.

However, having established that- however ambiguous its application- *lay* is still an important rhythmic concept in Hindustānī music, the remainder of the chapter was devoted to the interpretation of the concept, and to an empirical study thereof- measuring performance tempo in particular. The empirical evidence confirmed the observation that North Indian rhythmic practice is highly diverse, and also generated a number of insights and observations which the theoretical model outlined above could not predict- although it could accommodate them.

Turning our attention to surface rhythm and its relationship with *tāl* structure, chapter 4 introduced a number of issues in this respect, collected under the heading 'performance practice'. The main perspectives considered were of the organisation of performances as a whole- their episodic structure and the widespread tendency of acceleration- and within that context, two key areas- the structure of the *bandīs* or fixed composition, and techniques of improvised development.

Also in this chapter, the theoretical basis of chapter 1 was employed, in that it enabled the great diversity of performance practice to be viewed in the context of an

understanding of rhythmic organisation, and metric structure in particular. The distinction made in 1.4 between rhythmic styles and between modes of rhythmic organisation once again proved invaluable, in interpreting *bandiś* structures and development techniques. The variable parameters of *bandiś* structure proved to be associated with the variables of metric structure- tempo and rhythmic style in particular. The importance of syllabic frameworks generated by text or by instrumental stroke patterns was especially notable.

In development techniques, a distinction was drawn between *rāg* development in melismatic style, in which the relationship between surface rhythm and *tāl* was relatively weak, and development with strong textual and/or rhythmic components, whose syllabic organisation lends itself particularly well to rhythmic analysis. A number of key processes in development- *ālāp*, *bol bāñt*, *bol banāo* and so on- were discussed, the conclusion being drawn that the distinctions between them are often unclear. Improvised development in vocal music is often therefore most clearly described in <sup>terms of</sup> two parameters- text (or other syllable) use, and rhythmic style.

Building on the work of all four preceding chapters, 5 considered the important concept of *laykāri*, and in particular a number of techniques of rhythmic variation and their role in generating surface rhythm. Once again, the theoretical model of 1.4 proved invaluable in understanding and interpreting those techniques, and in clarifying why certain techniques are only heard in very specific contexts. The relationship between *laykāri* techniques (the division of the *tāl* and consequent generation of rhythmic patterns, the repetition and variation of these patterns, and cadential formulae) on the one hand, and the concepts of *tāl* and *lay* and important aspects of performance practice (acceleration, episodic structure, text use) on the other, was most striking.

The key to the analysis developed in Section I has been the theoretical model of rhythmic organisation established in chapter 1. Building on this understanding of North Indian music's dual structure- the two elements of which are surface rhythm and metric structure- and the hybrid nature of the metric element, the most important aspects of rhythmic organisation were analysed and interpreted in turn. The importance and role of Hindustānī concepts from *tāl*, *lay* and *laykāri* to *chand*, *prastār* and *tihāi* were considered in the context of this global model; so too were the notable preferences for complex metric

structures, syllabic organisation, cadential patterns, anacruses, and iambic subdivision, clarified in that same context.

It is not possible to cite and analyse every possible rhythmic pattern- no more so in North Indian music than in that of any other tradition. However, it is hoped that this analysis is comprehensive in the sense that it is flexible enough to permit application to any style of Hindustānī music, and to contribute substantially to the understanding thereof. In order to demonstrate how the insights gained in this research may be applied in practical analysis, this theoretical grounding is to be complemented with a specific case study, detailed in Section II below.



## Section II



## Chapter 6: The madhya lay- and vilambit gats in the sitār repertoire of Deepak Choudhury (Maihar gharānā)

### 6.1: Introduction

The first section of this thesis has outlined an approach to, and examined certain key concepts and methodologies in, the rhythmic analysis of Hindustānī music. This second section seeks to apply these concepts and methods to a specific case study. The intention here is both to clarify certain issues regarding instrumental compositional forms (*gats*), their rhythmic characteristics, relationship to each other and to particular vocal forms, and perhaps more importantly to demonstrate that such studies are made possible by the analytical methodologies outlined in Section I. This case study is just one illustration of the use of such methods; these ideas were developed during the course of a study of all major genres of Hindustānī music, vocal and instrumental, and should therefore have a correspondingly wide range of applications.

Section I put forward two major principles on which rhythmic analysis should be founded. In short it was suggested that an analysis of the music in its specific cultural context should be combined with an objective scientific analysis, with the aim of reconstructing the generative processes and musical meaning behind rhythm as performed. Building on these foundations key concepts of Hindustānī music were examined, such as *tāl*, *lay* and *laykāri*, while a wide range of perspectives were introduced (epistemological, conceptual, perceptual, aesthetic, technical and historical) which may assist the search for meaning in rhythm; findings are outlined in the conclusions to Section I.

The case study chosen for Section II is a comparative study of two major *gat* forms- the *vilambit* and *madhya lay gats*- as performed by the eminent sitārīst Deepak Choudhury (hereafter referred to as 'DC'). Following an introduction to DC's repertoire and its diversity in this chapter, rhythmic analyses of each of these genres will be presented in turn (chapters 7 & 8), followed by a comparison of the two and summary of the findings of the analysis in ch. 9. The principal methods are all suggested by the concepts outlined in Section I, and are in brief;

- A study of the *tāls* employed and their structures,

- Measurement of *lay* (both metric tempo and rhythmic density) and analysis of acceleration patterns (comparing them with models of ‘steady tempo/increasing rhythmic density’ and ‘increasing metric tempo’, cf. 3.2),

- Analysis of *laykāṛī*, both as autonomous rhythmic variation generated by subdivision of the *tāl* structure, and as the product of formal techniques and performance procedures (cf. chs. 4 & 5),

- Study of the structure of the *gats* themselves, and comparison of this with *tāl* structures (using reconstructions of *bol* patterns to clarify rhythmic structures, cf. 4.3.4),

- Analysis of formal scheme and performance procedures in improvised development (cf. 4.2),

- Analysis of preference for syllabic or melismatic styles, and for different modes of rhythmic organisation (cf. 1.4).

By looking at the results of these analyses in the light of what DC himself has said on the distinct rhythmic approaches of these genres (the oral tradition, so to speak), the focus of the study narrows down to the following questions;

- To what extent can the *vilambit* and *madhya lay gats* be described as distinct genres?, and

- Are the distinctions between them dependent, as DC indicates, on their relationships with analogous vocal forms?

It will be demonstrated that the application of these analytical methods is of considerable benefit in answering these questions. In a wider context, this shows the usefulness of rhythmic analysis in clarifying formal structure and performance practice, and hence the relationship between forms, genres and styles, their historical development and so on. In the field of Hindustānī music alone this type of analysis has many possible applications, and no doubt the basic principles could be applied further afield.



## 6.2: Rhythmic diversity in the sitār repertoire of Deepak Choudhury

As indicated above, the remainder of this chapter will be concerned with the place of the *madhya lay-* and *vilambit gats* in DC's *sitār* repertoire and in a wider context. The observations and analytical methods outlined above will be illustrated with a detailed study of DC's music. DC is one of the leading sitārists of his generation, and widely considered the most accomplished exponent of Maihar *gharānā sitār* style after his incomparable guru, Pandit Ravi Shankar. Born and resident in Calcutta, that apparently limitless source of fine musicians, DC has been a disciple of Ravi Shankar since being introduced to him by the *tablā* maestro Kanai Datta in 1966.

I have studied with DC since 1985: during that time I have not only had the privilege of countless teaching hours, but the opportunity of discussing music with him on many occasions, and of accompanying him on the *tānpurā* on his UK tours. The study which follows can of course only draw on a limited sample of the material thus collected and absorbed. I hope therefore that I have not taken too much for granted on the reader's part; where I have tried to give expression to musical insights gained through the process of learning from DC, I have naturally also attempted to illustrate those ideas with concrete examples.

One of the themes of this thesis has been the rhythmic diversity of Hindustānī classical music, and frequent reference has been made to the differences in rhythmic style and techniques between the various classical vocal genres. In discussing the music of DC, it is important to understand that he regards most of the formal elements of his repertoire, the *ālāp-jor* and the various *gat* types, to be derived in principle from these same vocal genres, namely *dhrupad*, *khyāl* and *thumrī*. He has indeed stated to me explicitly on several occasions that he considers his repertoire to consist of three principal parts or sections, namely *dhrupad-aṅg*, *khyāl-aṅg* and *thumrī-aṅg*.

The degree to which the various instrumental forms are in fact counterparts of their respective vocal 'models' is a complex question; this is an issue which also has a melodic

aspect which lies beyond the scope of this thesis, and thus cannot be dealt with exhaustively below. However, since the rhythmic aspect is arguably the greater part of the distinction between the vocal forms, in clarifying the rhythmic issues this work will shed some light on the important problem of the relationship between vocal and instrumental forms.

What is clear is that there exists a clear stylistic division between instrumental forms, in principle at least, which is derived from that between the assumed vocal parent genres. It will become equally apparent however, that the fact that all the notionally separate genres are performed by the same musician on the same instrument creates a tendency towards homogeneity. There is a degree of cross-influence between genres, which constitutes a unifying force to balance the intended separation between forms.

Despite these reservations, it is undoubtedly true that there are distinctions to be made between the rhythmic practice of the instrumental forms. These may be attributed partly to differences between the vocal genres and their aesthetic values, and partly to the disciplines of *tāl* structure and *lay* as experienced in each genre. Therefore it is a practical measure to accept as a starting point for this study, DC's own tripartite division of his repertoire- which is also consonant with the approach of this thesis as a whole, in that it takes the 'folk' view as primary, and complements that with objective analysis.

### 6.2.1: Deepak Choudhury's sitār repertoire in dhrupad-, khyāl- and ṭhumrī aṅgs

Section II will begin with an overview of the items typically performed by DC, and an outline of the three-way *aṅg* division and its rationale. Subsequent chapters will deal with the *vilambit*- and *madhya lay gats* in turn, from the point of view of rhythmic style. The table below outlines a prototypical performance plan for a DC concert programme. This prototype owes much to the genius of Ustad Allaiddin Khan (d. 1972), whose immeasurable service to instrumental music included a considerable development and expansion of its repertoire (an expansion which was achieved largely with recourse to vocal models).

This repertoire has been further developed by subsequent musicians, notably Allaiddin's disciple Pandit Ravi Shankar (b. 1920), from whom the basis of this scheme

was inherited by DC. Thus much of the discussion of DC's music which follows would apply equally to Ravi Shankar himself, and to other Maihar artists; a certain amount also applies to representatives of other styles.<sup>1</sup> The basic items in DC's repertoire are set out below;

aṅg	forms	tāls used
“dhrupad aṅg”	a. full ālāp-jor (+ optional jhālā)	
	b. madhya lay gat (in the same or a related rāg to the ālāp)	jhaptāl, rūpak tāl, matta tāl, cārtāl kī savārī, pañcam savārī tāl, dhamār tāl
	c. drut gat (optional)	drut ektāl, tīntāl, ārā cautāl
“khyāl aṅg”	a. brief ālāp (aochār)	
	b. vilambit gat	vilambit tīntāl
	c. drut (or madhya-drut) gat	drut tīntāl, ektāl
“thumrī aṅg”	a. dhun or similar light item in thumrī rāg (+ optional rāgmālā) <sup>2</sup>	madhya lay tīntāl, kaharvā tāl, dādrā tāl
	b. (optional drut gat in same rāg)	drut tīntāl, or ektāl

fig 6.1: Prototype performance plan for a concert programme by sitārist Deepak Choudhury.

In order to show how this prototype is adapted in practice, the table overleaf (fig 6.2) gives outlines of 25 of DC's actual performances (2 commercial recordings and 23 concert programmes). Some of the modifications to the prototype illustrated here were effected due to restrictions in time, others to accommodate the peculiarities of the rāgs selected.

A considerable variety of performance patterns is achieved by slight deviations from the outline given in fig 6.1. The *thumrī aṅg* items are those most commonly omitted, reflecting the fact that they are the most easily dispensable, when time limits necessitate a

<sup>1</sup>However the focus here will remain on the music of DC, and not digress into consideration of other artists and their styles.

<sup>2</sup>A ‘rāgmālā’ is a sequence (lit: garland) of rāgs played as a diversion in lighter genres such as the *dhun* (an item based on folk tunes and *dādrā* or *thumrī*).

recording details	tablā player	“dhrupad ang”			“khyāl ang”			“thumri ang”	
		ālāp	joṛ	jhālā	madhya-lay gat	drut gat	vilambit gat/ tīntāl	drut gat	dhun (madhya lay)
Concord 05-011	Kumar Bose	•	•		jhapāl	tīntāl	•	tīntāl	
Concord 05-021	Swapan Chaudhuri	•	•			tīntāl	•	tīntāl	
Edinburgh 18/8/85	Arup Chattopadhyay	•	•		rūpak				kaharvā
New Delhi 12/1/86	Shafat Ahmed	•	•		-----same rāg-----				
Calcutta 1/1/86	Swapan Chaudhuri	•	•	•	rūpak		•	tīntāl	dādrā
Calcutta 9/2/86	Swapan Chaudhuri	•	•	•			•	ektāl	dādrā
Varanasi 28/4/86	Chhotelal Mishra	•	•	•	jhapāl		•	tīntāl	
London 20/10/86	Arup Chattopadhyay	•	•	•	jhapāl	ektāl	•	tīntāl	
Calcutta 15/12/88	Swapan Chaudhuri	•	•	•	jhapāl	ektāl	•	tīntāl**	
Calcutta 13/2/88	Swapan Chaudhuri	•	•	•	rūpak*	tīntāl*			
Bally 21/2/88	Timir Baran Gupta	•	•	•	rūpak		•	tīntāl	
New Delhi 29/9/88	Sukhvinder Singh	•	•	•	jhapāl				dādrā
Calcutta 12/2/89	Anindo Chatterjee	•	•	•			•	tīntāl	
London 17/10/90	Shiv Shankar	•	•	•	rūpak	ektāl			kaharvā
Findhorn 19/10/90	Kousic Sen	•	•	•	rūpak	ektāl	•	tīntāl	
Edinburgh 20/10/90	Kousic Sen	•	•	•	jhapāl		•	tīntāl**	
Birmingham 27/10/90	Ghulam Sabri	•	•	•	jhapāl				
London 27/11/90	Sanjay Jhalla	•	•	•	jhapāl		•	tīntāl	dādrā
Nottingham 2/12/90	Sanjay Jhalla	•	•	•	jhapāl	tīntāl***	•	tīntāl**	
Durgapur 19/1/91	Sabir Khan	•	•	•			•	tīntāl	
London 7/9/91	Arup Chattopadhyay	•	•	•	jhapāl	ektāl	•	tīntāl	
Birmingham 17/9/91	Arup Chattopadhyay	•	•	•	rūpak		•	tīntāl	
Middlesboro 22/9/91	Arup Chattopadhyay	•	•	•	cārtāl ki savārī	ektāl	•	tīntāl**	
London 20/9/91	Arup Chattopadhyay	•	•	•	matta tāl	ārā cautāl	•	tīntāl	
London 6/10/91	Arup Chattopadhyay	•	•	•	rūpak		•		kaharvā

notes: \* these gats performed in a different rāg from the ālāp-joṛ

\*\* these gats (vilambit and drut) performed in a thumri rāg

\*\*\* this gat in tarānā style

fig 6.2: Outlines of 25 sitār performances by Deepak Choudhury.

reduction in the complete programme (another solution illustrated here is the merging of the *khyāl*- and *ṭhumrī* *aṅgs*, by performing *vilambit* and *drut gats* in a *ṭhumrī* or *dhunī* *rāg*). The *dhrupad aṅg*'s *ālāp* and *joṛ* are however indispensable, and the *khyāl aṅg* and *dhrupad aṅg gats* rarely omitted. The *jhālā* only occasionally follows the *joṛ*, and the *drut gat* is optional within the *dhrupad aṅg*. This selection gives a good idea of the relative frequency of use of the various *tāls*; of those DC considers his basic repertoire in *dhrupad aṅg*, only *pañcam savārī* and *dhamār tāls* are missing.

### Diverse influences

It will be useful in contextualising this repertoire, to consider briefly the influences felt upon its development. Numerous influences have been distilled in the development of Maihar *gharānā sitār* style<sup>3</sup>; both vocal and instrumental, mostly from earlier Hindustānī traditions, but with some influence also felt from Karnatic music and from various types of folk music.<sup>4</sup> In brief, we may enumerate the following influences;

- All major *gāyakīs*, particularly *dhrupad* and *khyāl*, but also *ṭhumrī/dādrā* and *tarānā* to a significant degree.
- *Sitār* styles of previous generations; especially the *masitkhānī* and *razākḥānī gat* types, also *toḍā* and *jhālā* (although these were ultimately derived from the *bīn*).
- Older stringed instruments, including the *bīn* and *rabāb*; some *bīn bol* patterns for *toḍā* and *tār paran*, and *bīn*-style *mīṇḍ*; *ghasīṭ* from the *rabāb*.<sup>5</sup>
- Solo *tablā* and *pakhāvaj* repertoires and *kathak* dance; their rhythmic variation techniques (*laykārī*), *tihāīs*, *cakkardārs* etc.
- South Indian rhythmic theory and practice (especially systematic '*jāti*' *laykārīs*)<sup>6</sup>
- Folk music of various regions.

This gives some idea of the eclecticism of Maihar instrumental style, and helps make the point that to talk of each section as being derived from a single vocal form is a simplification, albeit a useful and relevant one.

<sup>3</sup>For a more complete discussion of this see Slawek [1987:24].

<sup>4</sup>"The present-day *sitār* technique is considered to be a synthesis of techniques and technical forms derived from the *bīn*, *rabāb*, *pakhāvaj* (and *tablā*), and voice (especially *khyāl aṅg* singing)" [Slawek 1987:24].

<sup>5</sup>*Tār paran* is a technique in which *pakhāvaj parans* are imitated on the *sitār*, or other stringed instruments. *Mīṇḍ* refers to the lateral deflection of the playing string of the *sitār*; *ghasīṭ* to a slide along the length of the string. *Rabāb* is type of plucked lute now superseded in Hindustānī music by the *sarod*; *bīn* (*rudra vīṇā*) is a stick zither which is also now extremely rare.

<sup>6</sup>See 5.2.1.

### 6.3: The madhya lay- and vilambit gats in the context of Deepak Choudhury's sitār repertoire

The foregoing introduction to Maihar *sitār* styles, and the division of the repertoire into three 'aṅgs' based on the analogies with three major *gāyakīs*, give important clues as to what we might expect to find in the rhythmic analysis.

<b>dhrupad aṅg</b>	<i>ālāp, joṛ;</i>	<b>madhya lay gat;</b>	<i>(drut gat)</i>
<b>sitār:</b>			
<i>dhrupad</i> vocal:	<i>ālāp, joṛ;</i>	<i>dhrupad;</i>	<i>(dhrupad in drut lay)</i>

<b>khyāl aṅg sitar:</b>	<i>(aochār);</i>	<b>vilambit gat;</b>	<i>drut gat</i>
<b>khyāl vocal:</b>	<i>(ālāp);</i>	<i>barā khyāl;</i>	<i>choṭā khyāl</i>

fig 6.3: An illustration of the analogies between instrumental and vocal forms, *dhrupad* and *khyāl*.

At the level illustrated here, of large scale formal structure, the analogies of the *dhrupad* and *khyāl aṅgs* with their respective *gāyakīs*, and the distinctions between them, are clear. In *dhrupad* (*aṅg*) the principal *rāg* development takes place in the extended unaccompanied and unmetered introduction (*ālāp, joṛ*). In *dhrupad gāyakī* a medium tempo composition is then sung, which is developed with considerable rhythmic invention but strict adherence to the use of the song text, and to syllabic organisation in general. This may be complemented by a faster *dhrupad* (in *sūltāl* or *tivrā tāl*, typically).<sup>7</sup>

There are various ways of structuring *khyāl* performances; the model on which the Maihar *gharānā* 'khyāl aṅg' is based is one of the more common schemes. This features a minimal *ālāp*, followed by an extended *barā khyāl* in *vilambit lay*, and a fast *choṭā khyāl*. The main *rāg* development takes place within the metered *barā khyāl*; in many *khyāl* styles this means the rhythmic organisation is determined largely by the accommodation of melismatic melodic development, and the loosening of the adherence to the song text (see 1.4.3).

<sup>7</sup>*Dhrupad* singers also often perform *dhamār bandishes*, as a complementary second item, of which there is no equivalent instrumental form.

The most obvious differences we may expect then between the *vilambit* and *madhya lay gats*, if indeed they are closely related to the *baṛā khyāl* and *dhrupad* forms, are in these areas;

- *Tāls*; each '*aṅg*' would use *tāls* employed for its 'parent' *gāyakī*. This would mean *dhrupad aṅg gats* being set mainly in *cautāl*, *dhamār tāl* and *jhaptāl*, and *vilambit gats* in *tintāl*, *ektāl* and *jhūmrā tāl* (it takes little analysis to see that this is only partially fulfilled).

- *Lay*; the distinction between slow and medium tempi seems straightforward enough: *baṛā khyāl* is generally sung at slower tempi than *dhrupad*. As for acceleration, the research summarised in chapter 3 has shown that tempi of *dhrupad* performances do accelerate significantly, although never by clear and deliberate increments; the acceleration is a gradual and possibly unconscious process (see 3.2.3). *Khyāl* performances often retain very steady metric tempi for long periods, but also frequently include stepped increases in tempo (again, see 3.2.3).

- Composition structure; this is harder to predict since there has been little detailed study of this question in the vocal repertoire. However, one might look for features in *dhrupad aṅg gats* which might correlate to the typical *dhrupad* procedure of setting *cautāl* compositions with a textual/melodic grouping of 3+3+3+3 against a *tāl* structure of 4+4+2+2 (see 4.3.3). In *khyāl aṅg gats* we may look at the use of the *mukhrā*, a prominent feature of vocal *baṛā khyāl* compositions (although since many *dhrupad* compositions also employ *mukhrās*, we must take care in such comparisons).

- Preference for melismatic or syllabic styles; all improvisation in *dhrupad* is sung to syllables taken from the composition text itself, using very little or no melisma (*bol bāṇṭ*). In *baṛā khyāls*, text syllables may be treated in a highly melismatic fashion, or not used at all. One would expect this to be reflected in the application of a more melismatic approach in *vilambit* than in *madhya lay gats*.

- Development procedures; the basic procedure of *dhrupad* improvisation involves the breaking up of the text (*bol bāṇṭ*) into new rhythmic and melodic patterns; in *baṛā khyāl*, *rāg* development (*vistār*) is set in (quasi-) free rhythm at this stage, developing into *tāns* (fast melodic runs) as the tempo increases (see 4.4). This distinction, which is obviously

inseparable from the syllabic/ melismatic dichotomy noted above, should be reflected in the instrumental forms.

- Mode of accompaniment; *khyāl* is accompanied by a fixed drum pattern (*theḱā*), albeit in elaborated form, performed on the *tablā*. In contrast *dhrupad* accompanists, who use the barrel-drum *pakhāvāj*, may improvise simultaneously with the vocalist (*sāth saṅgat*); parallels with this distinction should be easy to identify.

Thus the methods of analysis outlined in 6.1 (studies of *tāl*, *lay* and *laykāri*; *gat* structures, formal schemes and performance procedures in development, and preferences for syllabic or melismatic styles) are appropriate in examining the distinctions between these two *gat* forms. They should help to answer the two main research questions- “to what extent are the *madhya lay*- and *vilambit gats* separate genres?”, and “are the distinctions between them based on their relationships with analogous vocal forms?”. The foregoing discussion of DC’s *sitār* repertoire, and the brief outline of the historical background of these two genres and the influences felt on them, will provide contextualisation. Combined with the rhythmic analysis, we should have an idea how these historical processes may be traced in the music itself, and how the tenets of the oral tradition are borne out (or not?) by objective analysis of the music.

The rhythmic analyses of these two forms are set out in chapters 7 & 8, and the findings of the comparative study in chapter 9.



## Chapter 7: The madhya lay gat (dhrupad āṅg)

### 7.1: Introduction to the dhrupad āṅg

All modern *sītār* styles feature the *dhrupad*-based *ālāp* and *joṛ*, the unaccompanied introduction and development of the *rāg*. Maihar *gharānā* is however unique in presenting a complete ‘*dhrupad āṅg*’, with a *gat* form based to some degree on *dhrupad* principles, the *madhya lay gat*. The first part of this comparative case study focuses on the *madhya lay gat* as performed by DC in the context of this *dhrupad āṅg*. Following an outline of the principles of the *dhrupad āṅg*, this chapter will discuss the rhythmic aspects of these *gats* in greater detail.

In terms of general organisational principles, the *dhrupad āṅg* follows *dhrupad* itself in that the *rāg* is introduced fully in an unmetered *ālāp* and *joṛ*.<sup>1</sup> The melodic material thus established is further used as the basis of rhythmic improvisation in the metered (*nibaddh*) sections, at medium and fast rather than slow tempi. There is a clear distinction here with modern *baṛā khyāl* styles, in which the main *rāg* development takes place within the metered sections.

#### Tāl and tempo in dhrupad āṅg gats

There are other implications of the title “*dhrupad āṅg*” however, apart from the fact that the *rāg* development takes place in *anibaddh* sections, and not all of these show such a clear correlation between instrumental and vocal genres; some of the more obvious rhythmic factors are illustrated in the table below;<sup>2</sup>

	dhrupad (vocal)	‘dhrupad āṅg’ sītār
medium tempo:	<i>cautāl, jhaptāl, āditāl</i>	<i>jhaptāl, rūpak tāl, matta tāl, cārtāl kī savārī, pañcam savārī tāl, dhamār tāl</i>
	40-125 MM	84-180 MM
fast tempo:	<i>sūltāl, tivrā tāl</i>	<i>ektāl, tīntāl, āṛā cautāl</i>
	224-410 MM	342-600 MM

fig.7.1: A comparison of the *tāls* and tempi used for vocal *dhrupad* and DC’s *dhrupad āṅg* *sītār* performances.<sup>3</sup>

<sup>1</sup>In fact, DC suggests the presence of a rudimentary metric structure in the *joṛ* phase, which may be counted by means of alternating *tālī* and *khālī*. However, detailed discussion of this issue is beyond the scope of this thesis.

<sup>2</sup>There are also implications for the type of ornamentations employed, accompaniment style and so on, many of which lie beyond the scope of this thesis.

<sup>3</sup>These figures are based on those given in fig 3.8.

The distinctions here are most striking, both in *tāl* and *lay*. The faster tempo of the *sītār* is easier to understand, since it is an inevitable side-effect of instrumental music: the *sītār* does not have the length of sustain of the voice, but is capable of faster articulation, thus both minimum and maximum tempi are higher for the *sītār* than for vocal music- as are rhythmic densities (see 3.2.2).

The difference in *tāls* is harder to explain: there is no technical reason why *cautāl*, *sūltāl* or *tivrā tāl* could not be used for the *sītār* (indeed all these have been, albeit rarely, by other musicians of this *gharānā* including Ravi Shankar himself). Since DC is of course aware that *cautāl* is the most common *dhrupad tāl*, the reason must be one of choice; one of the attractions of the medium tempo *gat* for DC is the opportunity to play in irregular, non-binary *tāls*, which provide a special challenge for *laykāri* and thus an important stimulus. Although the use of *cautāl* would be an authentic *dhrupad* feature, it would be at the expense of the stimulus of irregular structure; such ‘authenticity’ is evidently not enough to guarantee its inclusion. The *drut gat* as used in this context is clearly an extension of the *drut gat* used in the *khyāl āṅg*, and the occasional use of *ārā cautāl* is a concession to the rhythmically adventurous spirit of the *dhrupad āṅg*.

This initial comparison of *tāls* and tempi suggests that factors other than the analogy with vocal forms influence the rhythmic style and organisation of these *gats*, and confirm the need for a more detailed study. The following section will deal in much greater detail with the rhythmic aspects of the *madhya lay gat*, as performed in the context of DC’s *dhrupad āṅg*.

## 7.2: The ‘dhrupad āṅg’ madhya lay gat

The *gats* which follow *ālāp* and *joṛ*, described by DC as “*dhrupad āṅg*” *gats*<sup>4</sup> are medium tempo compositions, set to non-quadratic (and mostly asymmetrical) *tāls*. Their performance stresses, in principle, *dhrupad* and *bīn* techniques and minimises the use of

<sup>4</sup>Described by Slawek, after Lalmani Misra, as *kūṭ bāj gats* [1987:19, 67]. *Kūṭ* means literally an illusion or trick (amongst other meanings); DC uses the term ‘*kūṭ lay*’ to describe tricky or deceptive rhythm in *laykāri*.

*khyāl aṅg* techniques in both *sitār* and *tablā* accompaniment.<sup>5</sup> The most common *tāls* performed in this context by DC are *jhaptāl* and *rūpak tāl*, for which on occasion *matta tāl*, *cārtāl kī savārī*, *pañcam savārī tāl* or *dhamār tāl* may be substituted. The practice of performing on *sitār* in *tāls* other than *tīntāl* or *drut ektāl* is relatively new, and has developed principally within Maihar *gharānā*.<sup>6</sup> There are differences even within Maihar *gharānā* over the *tāls* to be employed, and their treatment; the features described below apply specifically to DC.

The only unequivocally *dhrupad* influenced feature of these *gats* are the almost complete absence of melismatic *vistār* and the medium to fast *lay*. DC stated to me the principle that the development of *dhrupad aṅg gats* should emphasise *bīn*-derived *bolkāri* and *toḍās*<sup>7</sup>, and complex *laykāri*, minimising the place of *vistār* and *tāns* (which are *khyāl* influenced features, see note 4 above). In practice the *laykāri* is often complex, some *toḍā* patterns are used and there is little *vistār*, but there is little of the complex *bīn*-style *bolkāri* (this is mostly found in the *joṛ* section), and *tāns* are in fact a prominent part of the development process.

Each *madhya lay gat* performance (as is the case with other genres), proceeds through a number of loosely defined stages with considerable flexibility, but with consideration for a number of basic principles. All performances begin with statement of the *gat* itself (at least the *sthāyī*, and sometimes the *antarā* as well); this *gat* is repeated several times, and accompanies an introductory *tablā* solo. Thereafter the performance comprises episodes of melodic and rhythmic improvisation, punctuated by *tablā* solos (which are accompanied by the *sthāyī* refrain). Each episode of improvisation is itself often organised into sub-episodes marked off by cadential formulae (usually *tihāīs*), and each episode proper is almost invariably concluded with a *tihāī*. Thus the basic process of a performance in this genre may be illustrated as follows

<sup>5</sup>Slawek writes, "According to Ravi Shankar, the correct rendition of *gat vistār* in such *tāl*-s [*cautāl*, *pañcam savārī tāl*, *tivrā tāl*, *dhamār tāl* etc] requires the musician to avoid certain ornaments and *tān*-s that are peculiar to the *khyāl śailī*, such as *khaṭkā* and *murkī*.....and *sapāṭ tāns*" [1987:93-4]. Nb. *śailī* means 'style', *khaṭkā* and *murkī* are particular melodic ornaments, and *sapāṭ* means 'straight'.

<sup>6</sup>See Dick [1984:399], and Manuel [1983b:412]. A number of non-Maihar musicians have however taken to performing in *jhaptāl* and *rūpak tāl* in particular. Early references to such practice include Bhikha Khan's sitar manual [n.d., but the author died in 1943], which lists compositions in *jhaptāl*, *ektāl*, *dādrā* and *kaharvā tāls* as well as *tīntāl*.

<sup>7</sup>*Bolkāri* (*bol* + *kāri*) implies manipulation of stroke patterns, while *toḍā* (probably from *toḍnā*, 'to break, reduce') suggests a process analogous to *bol bāṇṭ* (lit: division/ distribution of the words), and often means in practice fixed *bol* patterns for use in improvised development.

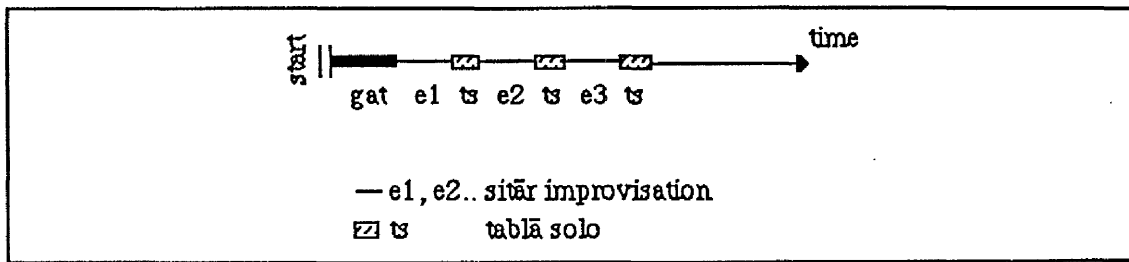


fig 7.2: Performance procedure for *madhya lay dhrupad aṅg gat*.

The next basic principle is that the *lay* should increase in stages throughout the performance (see 4.2.2). This applies to both tempo and rhythmic density: tempo accelerates from between 80-100MM to 160-180MM. The *lay* ratio (*laykārī*) may increase from 1:1 through 2:1, 3:1, 4:1, 6:1 and even 8:1, with occasional use of intermediate stages (eg 5:2, 7:2, 4:3) or passages which do not settle down to one clear ratio or the other. The two higher ratios, 6:1 and 8:1, occur not at the end of the performance as might be expected. They occur, if at all, earlier in the performance, and subsequently fall back to 4:1 as the tempo increases.

A variety of formal techniques may be employed, such as;

- *Tihāī* (see 5.2.4); this technique of triple repetition of rhythmic phrases is widely used as a cadential signal at the end of improvisation episodes and sub-episodes. A great variety of patterns is heard, including *nauhār tihāīs* (where each third of the *tihāī* itself contains a short *tihāī*), and *cakkardār tihāīs* (a similar type in which the end of the pattern misses *sam* only narrowly on the first two repetitions, finally landing on *sam* the third time).<sup>8</sup> Most *tihāīs* end on *sam*, but in *gats* including *mukhrās*, many end immediately before the *mukhrā*, and *anāgat tihāīs* (which end immediately before *sam*), are also often heard. They may occur at any *lay* ratio, and may even be designed so that each repetition is played at a different *lay*.<sup>9</sup>

- *Toḍā*; this term may be used either as a catch-all to cover the period of development following the *gat* and preceding the *tāns*; or in a specific sense to mean a variety of fixed *bol* patterns played in some genres, involving combinations of both single and double strokes. Fixed *toḍās* as such are not played in these *tāls*, but *bol* patterns

<sup>8</sup>DC distinguishes between *cakkardār tihāīs*- those in which the first and second elements miss *sam* narrowly- from *nauhār tihāīs* in which they may land anywhere. This distinction is not shared by the tradition as a whole; most *tablā* traditions define a *cakkardār* as a triple repetition of a short phrase with *tihāī* (ie. a *tukrā*), which could be described as 3(A = 3t), where A is the phrase and t the short *tihāī* element.

<sup>9</sup>see fig 7.27.

combining single and double strokes (eg. “da diri diri diri, da diri da ra...”), in the style of fixed *toḍās*, do occur.

- *Laykāṛī*; several types of *laykāṛī* are used, including ‘divisive *laykāṛī*’ (the shifting of *lay* ratios, which may be regarded as an aspect of acceleration, see 5.2.1) and ‘*kūṭ lay*’<sup>10</sup> (deliberately confusing and complex rhythm, often shifting *lay* ratio at will).

- *Vistār*, *vistār* as such is rarely heard within this genre, but some melismatic passages do occur (albeit generally subsumed within the syllabic structure).

- *Tān*; these fast melodic runs make up a large part of any performance. Most are played in *caugun* (4:1), but *chegun* (6:1) and *āṭhgun* (8:1) are also heard.

- *Sāth saṅgat*; ‘synchronised accompaniment’<sup>11</sup>, a passage of which is used as a climax to most *dhrupad aṅg* performances. DC usually plays a continuous and extended *tān*, but he may include fragments of *toḍā* (ie. combine single and double strokes), and usually ends with a *cakkardār* or *nauhār tihāī*.

Since the *lay* increases over the course of the performance, the early improvisations alternate and combine *toḍās*, *kūṭ lay*, simple *dugun* (2:1) *tāns* and occasional melismatic interludes, all at low rhythmic densities. Later, at higher rhythmic densities, the rhythmic complexity and stylistic diversity decrease as the speed increases; the latter half of the performance usually consists of *tāns* in *caugun* with cadential *tihāīs* (the *tihāīs* are typically played at lower rhythmic densities, and more interesting rhythmically). The following example illustrates how this formal scheme may be realised in practice;

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<sup>10</sup>DC’s term, see above.

<sup>11</sup>See 4.2.3.

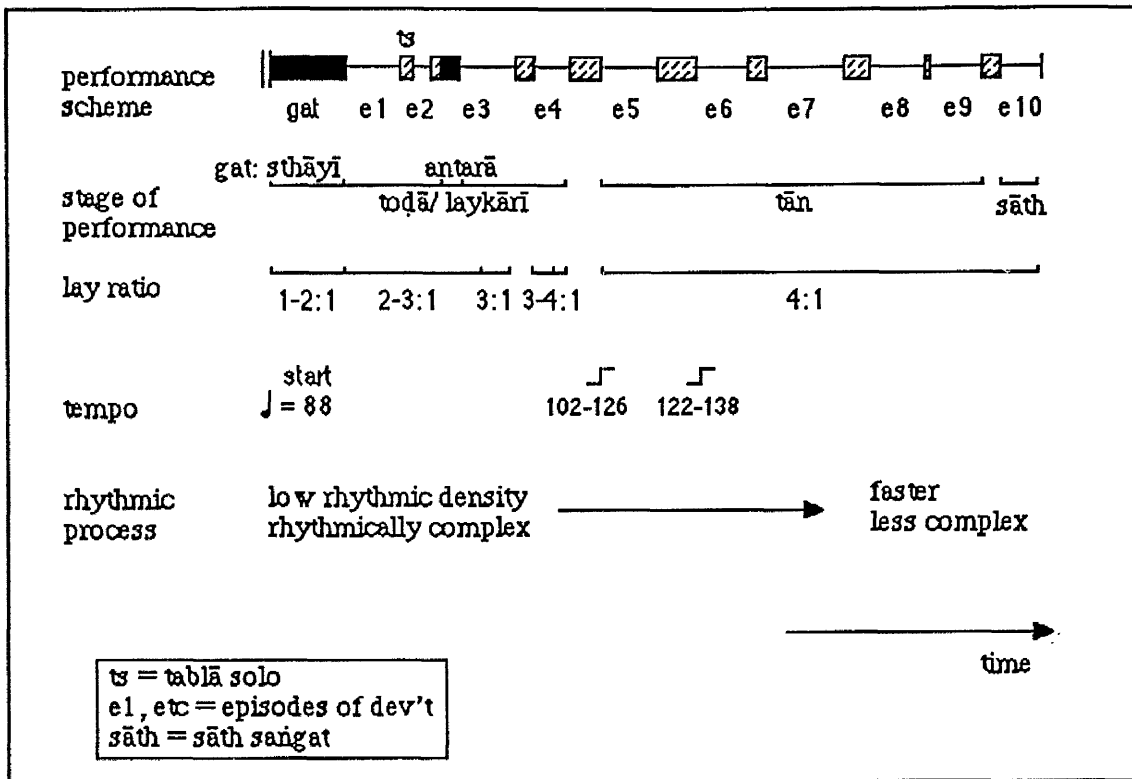


fig 7.3: An illustration of the major performance stages and *lay* increase, from a performance of a *madhya lay gat* by DC, of *rāg pūriyā* in *jhaptāl*.

Within each episode, there may be a microcosmic parallel to the large scale organisation; thus the episode is often split into sub-episodes, marked off by *tihāīs*. There is also usually some relationship between these sub-episodes, although there may also be considerable development between them (for example, similar melodic material may be presented at different *lay* ratios in two consecutive sub-episodes). Improvisations are marked off by *tihāīs* to *sam* (or to the *mukhrā*, where appropriate), thus the ending of each passage of improvisation becomes its focus.

Improvisations may begin from any point in the cycle, and may in principle divide the cycle in any manner. DC himself distinguishes between improvisations in which he;

- divides the cycle as a whole;
- treats each *vibhāg* in turn, ie. follows the internal divisions of the *tāl*;
- is essentially free, albeit temporarily, of the constraints of the *tāl* structure

(although there is usually a clear relationship between surface rhythm and pulse).

In other words DC makes conscious decisions to construct rhythmic patterns to fill either a full cycle, or a part of that cycle; or he refrains from making such a decision, allowing rhythmic development to follow its 'natural' course. It is sometimes possible to

distinguish between these categories in practice, but one is rarely able to do so entirely objectively. This observation is most useful as a performer's confirmation of the variety of methods which may be employed in the rhythmic structuring of improvisations. It does not necessarily help us to determine the underlying structure in any particular instance, but knowing something concrete about the artist's approach will indirectly help the analysis.

The features to be discussed in detail below (7.3) include;

- *Tāls*: common features of *dhrupad āṅg tāls*, the importance of counting patterns, *ṭhekā* and *lay*.
- *Gats*: their rhythmic structure and variation in performance.
- Development: episodic structure; increase in rhythmic density; use of formal techniques; the structure and process of improvisation.
- *Lay*: tempo, rhythmic density; acceleration patterns.

### 7.3: The madhya lay gat in performance

#### 7.3.1: Tāls

The *tāls* in consideration, those which form DC's repertoire in *madhya lay gats*, are principally the following six;

**jhaptāl** : 10 *mātrās*, 2+3+2+3

X	2	O	3	X
dhin nā	dhin dhin nā	tin nā	dhin dhin nā	dhin

**rūpak tāl** : 7 *mātrās*, 3+2+2

X/O	1	2	X
tin tā tirakita	dhin nā	dhin nā	tin

**matta tāl\*** : 9 *mātrās*, 4+2+3

X	2	3	(4)	X
dhin trkt dhin nā	tū nā	dhindhin nā, dhin dhinnā		dhin

**cārtāl kī savārī (savārī tāl)** : 11 *mātrās*, 4+4+3

X	2	3	(4)	X
dhī trkt dhin nā	tū nā kat tā	dhīdhī nā, dhī dhīnā		dhī

**pañcam savārī tāl** : 15 *mātrās*, 4+4+4+3

X	2	3	4	(5)	X
dhin trkt dhin nā	tū nā kat tā	trkt dhinnā tūnā kattā	dhindhin nā, dhin dhinnā		dhin

\*The *ṭhekās* given here for *matta*, *savārī* and *pañcam savārī tāls* from *tablā* player Arup Chattopadhyay (pers. com.)

**dhamār tāl:** 14 *mātrās*, 5+5+4  

X	2	3	X
ka dhi ta dhi ta	dhā - ge ti ta	ti ta tā -	ka

fig 7.4: *Tāls* used in DC's 'dhrupad aṅg' madhya lay gats.

To these six, any number of rare or specially invented *tāls* could be added; DC expresses confidence that having mastered *tūntāl*, *ektāl*, *jhaptāl* and *rūpak tāl*, any other *tāl* could be learned and performed without difficulty, including 1/2-*mātrā tāls*.<sup>12</sup> However, these are the only *tāls* which he performs regularly in this context.

There are some differences between the structures of these *tāls* as quoted above, and those given in 2.1; this is because certain adaptations have been made in their practice. In particular, the counting patterns of *dhamār* and *matta tāls* are different from those encountered in most works. That of *dhamār* is a mere simplification, removing a *khālī* gesture in the 6th *mātrā* (which in any case has no corresponding change in drum strokes—see 2.2.3). That in *matta tāl*, from 2+3+4 to 4+2+3 is more substantial, and has been effected in order to introduce a final group of 3, making its structure similar to that of the two 'savārī' *tāls*, and to that of *jhaptāl*. In the case of *matta-* and the *savārī tāls*, the final group is counted as either 1 1/2 + 1 1/2 (with two *tālīs*), or as 1 + 1\*(1) (with two *tālīs* and a *khālī*). *Khālī* gestures could be used for the second *vibhāgs* of *matta tāl* and *cārtāl kī savārī* in particular, but this is not the usual practice in this *gharānā*.

A similar process has occurred in the development of *cārtāl kī savārī* (*savārī tāl*) and *pañcam savārī tāl*, at an earlier date. Both *cārtāl kī savārī* and *pañcam savārī tāl* are listed in older works most commonly as 15 beat *tāls*, usually with a division of 3+4+4+4 or 4+3+4+4, rather than *pañcam savārī*'s modern 4+4+4+3.<sup>13</sup> *Cārtāl kī savārī* is, as the name suggests, a variant of *cārtāl* (*cautāl*), with the group of 3 replacing *cautāl*'s 2+2 (4 4 2 2 becomes 4 4 3).<sup>14</sup> The exact historical development of these *tāls* is not clear, but the name *cārtāl kī savārī* suggests that 'savārī' refers to the final group of 3. This was suggested to me by DC, but the belief seems to be contradicted by the fact that in the old *savārī tāl*, the

<sup>12</sup>His fluency in *matta* and the *savārī tāls* confirms this (cf. Bhattacharya on Allauddin Khan "All the half-beat talas .....could be obtained from Baba who very infrequently played these talas, but he had an incredible command over them" [1979:203]).

<sup>13</sup>In a survey of 10 Indian sources, mostly Hindi *tablā* or *pakhāvaj* manuals, "savārī tāl" is listed as 14, 15, 16, 30 and 32 *mātrās*: only one source gives 15 *mātrās* divided 4 4 4 3 [Aikutkar 1960?:92]. *Pañcam savārī* (or *savārī pañcam*) *tāl* is listed in 5 of the 10, always as a 15 *mātrā tāl*, but in none as 4 4 4 3 (twice each as 4 3 4 4 and 3 4 4 4).

<sup>14</sup>The *thekā* cited here is however a variant of that of *ektāl* (cf. 2.1).



group of 3 was not the final *vibhāg*. Whatever the case, this final group of 3, which in many contexts is split in half to give 1 1/2+ 1 1/2 (ie. 3+3 at double speed), is a feature of four of the six *tāls* used in this style.

The final point to be made is that despite the close similarity between these *tāls*- in their non-binary structures, similar tempo ranges and usage- there are distinctions of character between them. Of the two most common *tāls*, *jhaptāl* and *rūpak*, the latter appears to be more appropriate for lighter *rāgs* (for instance, one of the *rūpak tāl* performances from which examples will be introduced below is of *rāg tilak kāmōd*). *Rūpak tāl* appears to be something of an oddity in this context, since the group of 3 *mātrās* is not the final *vibhāg*. More generally, differences in structure and length of cycle generate distinctions in mood and character between these *tāls* (eg. since the tempi are comparable, *pañcam savārī tāl*'s cycle is over twice as long as *rūpak tāl*'s).

The *tāls* employed for DC's *madhya lay gats* are bound together by their tempo and their irregular structures. Although irregular, these structures are simple in that their *ṭhekās* and counting patterns express the same *vibhāg* divisions<sup>15</sup> (cf 2.2.3). Indeed in the case of *matta tāl* and the two *savārī tāls*, the *ṭhekās* have clearly been devised with this in mind. The *ṭhekās* are simpler than those found in manuals on *pakhāvaj* or *tablā* playing: this is because complex *ṭhekās* are preferred for drum solos, whereas for instrumental or vocal accompaniment a simpler *ṭhekā* is required.<sup>16</sup>

### 7.3.2: Gats

Most of the medium tempo *gats* performed by DC are composed by him, and are idiomatic to the *sītār*, not converted vocal compositions.<sup>17</sup> The fixed composition is usually short: a minimum of a single one-cycle *sthāyī*, although the *sthāyī* may in some cases consist of two lines<sup>18</sup> and each of these may cover two cycles, especially in *rūpak tāl*. The *antarā*

<sup>15</sup> *Dhamār tāl* might appear to be an exception to this rule, but in DC's conception the *ṭhekā* is to be performed in such a way as to support the 5+5+4 division.

<sup>16</sup> DC credits his guru Pt Ravi Shankar as the inspiration for this simplification of *ṭhekās*.

<sup>17</sup> DC does however also compose vocal compositions in *jhaptāl* and other *tāls*, in *khyāl* style, and teaches these to his students, both vocalists and instrumentalists. These are quite distinct in style and tempo, as well as construction, from those he performs on the *sītār* in this context.

<sup>18</sup> The second line is sometimes referred to as the *mañjhā* (cf *masītkhānī gats*, later and 4.3).

sections are usually improvised and integrated into the development process, and may be structurally distinct from the *sthāyīs*.

### Simple gats

As a general rule, the *gats* are based on simple *bol* patterns which express the divisional structure of the *tāl*.<sup>19</sup> For example, *jhaptāl gats* may be based on variants of the simplest expression of a 2+3+2+3 structure, as follows;

**jhaptāl** : 10 mātrās, 2+3+2+3

X	2	O	3	X
da ra	da ra da	da ra	da ra da	da

fig 7.5: A simple *bol* pattern for a *jhaptāl-gat*.

The basic rule, as illustrated here, is that the “da” stroke should fall on the accented beat (in this context, the first *mātrā* of each *vibhāg*).<sup>20</sup> This prototypical pattern is usually modified by one or both of the following processes; *bols* may be varied by doubling “da” or “ra” to “diri”, and/or the final group of three *mātrās* is often divided into two equal segments. The *bol* for this 1 1/2+1 1/2 group is usually “da ra da ra”, distributed in either of two ways;



fig 7.6: Two methods of distributing the *bol* “da ra da ra” over 3 *mātrās*.

There appears to be a functional equivalence between these two distributions (which applies in all *tāls* with similar 3-*mātrā* groups); they are completely interchangeable, and the rhythm actually heard is often somewhere between the two, or a combination of both, for instance;

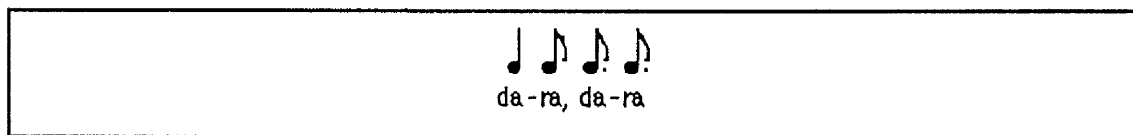


fig 7.7: An example of the rhythm of the *bol* “da ra da ra”, between the two possibilities in fig 7.6.

<sup>19</sup>Slawek quotes the well known *sitārist* Lalmani Misra “A common feature of the *kūt-bāj gat-s* [ie. non-*tintāl gats*] is that their *mizrāb-bol* patterns are usually governed by the divisions of the *tāl* in which they are composed” [1987:67]. Nb. the *mizrāb* is the wire plectrum with which the *sitār* is plucked.

<sup>20</sup>In some cases accented strokes are played using a technique called *thoñk* (lit: hammer), where the ‘da’ is substituted by a ‘ra’ stroke in which the *mizrāb* (plectrum) follows through to clip the soundboard and *taraf* (sympathetic strings). In this case the *bol* would still be recited as ‘da’ however, and likewise would be transcribed in this work as ‘da’.



The many rhythmic variations may seem complicated at first sight: however, the basic structure is extremely simple, and these patterns must be seen as a selection from the infinite number of possible variations. The structure is based on the *tāl*'s 2+3+2+3 division, and there is no syncopation across these *vibhāg* divisions. It is therefore possible, and instructive, to consider the patterns as 2 and 3-*mātrā* 'modules'. These *bol* patterns are all variants of the basic "da ra" and "da ra da" patterns, derived according to one or more of the following processes.

- Syncopation (within the *vibhāg*); the displacement of strokes by half a *mātrā* (ie. onto 'off-beats').

- Stroke doubling; "da" or "ra" become "diri". If redoubled, the stroke "da ra" may become "da-diri dara", performed in the same time (see fig 7.8, c.4, m.6-7).



- Splitting the group of 3 into halves (hemiola). "da ra da" becomes "da ra, da ra" (c. 4-5)- see above.

These rules are illustrated again in the following example in *cārtāl kī savārī*, which also introduces some possibilities for *bol* patterns of 4-*mātrā vibhāgs*,

$$m = \downarrow = 85-93 \text{ mm}$$

c.1			
c.2			
c.3			
c.4			
c.5			

\* = *kṛtān* (pull-off)

fig.7.9: A rhythmic transcription of a *madhya lay gat* by DC in *rāg jog, cārtāl kī savārī*.

Note that in this example the *bols* of the second *vibhāg* are usually syncopated (producing patterns with rhythmic groupings of 3+2+3 in the 4 *mātrās*, at *dugunī* or double *lay*), whereas those of the first *vibhāg* are not. Otherwise, this example exhibits the same principles as the earlier one in *jhaptāl* (fig 7.8).

### Syncopated gats

Most *gats* follow the structure of the *tāl*: however, some *gats* do display syncopation across the *vibhāg* divisions- particularly those in *rūpak tāl*. One such *gat* is illustrated below;

$M = \text{♩} = 25 \text{ mm}$

X 0	1	2	3	1	5	2	X 0	1	5	2
1	2	3	4	5	6	7	1	2	3	4
♩	♩	♩	♩	♩	♩	♩	♩	♩	♩	♩
da	ra	diri	da-ra,	di	ri	da ra	da	ra	diri	da-da ra

← Syncopated patterns →

fig 7.10: A rhythmic transcription of a *madhya lay gat* by DC in *rāg tilak kāmōd*, *rūpak tāl*.

This first example illustrates a derivation from a simple *rūpak tāl* pattern of “da ra diri, da ra, da ra”, involving syncopation of the last four *mātrās* (into a grouping of 3 2 3, see above). *Gats* such as this involve a syncopation across *vibhāg* boundaries as an integral part of their structure. Others do not, but may feature such syncopation as variations. (In both cases, syncopation occurs most commonly in *rūpak tāl gats*). The latter case is illustrated in fig 7.11 below.

$M = \text{♩} = 90 \text{ mm}$

X 0	1	2	3	1	5	2	X 0	1	5	2
1	2	3	4	5	6	7	1	2	3	4
♩	♩	♩	♩	♩	♩	♩	♩	♩	♩	♩
da	ra	diri	da	diri	da	da-ra	da	ra	diri	diri

← Syncopated →

fig 7.11: A rhythmic transcription of a *madhya lay gat* by DC in *rāg bhīmpalāsī*, *rūpak tāl*.

This example illustrates a similar process covering the first five *mātrās* of the cycle (c.12, splitting into 2+3, rather than 3+2); the fact that this simple device produces a most interesting variation which temporarily disturbs the listener’s sense of the *tāl* division, is indicative of the rhythmic potential of these irregular *tāl* structures.

### Mukhrā gats

Most *gats* fall into the above categories; a distinct type deserves mention however, and that is of *gats* featuring a *mukhrā*, 2 1/2 *mātrās* long. This type of *gat* has been developed in the last few years by DC himself.<sup>24</sup> Two examples are given below;

$$M = J = 90 \text{ mm} +$$

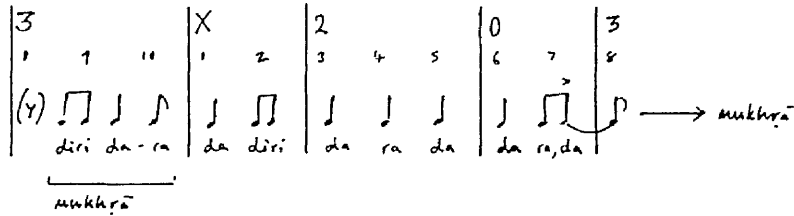


fig 7.12: A basic *bol* pattern for a *mukhrā*-based *gat* by DC in *rāg pūriyā*, *jhaptāl*.

In this performance, there is in fact little variation of this *bol* in subsequent repetitions, and the *antarā* employs exactly the same pattern.

$$M = J = 92 \text{ mm} +$$

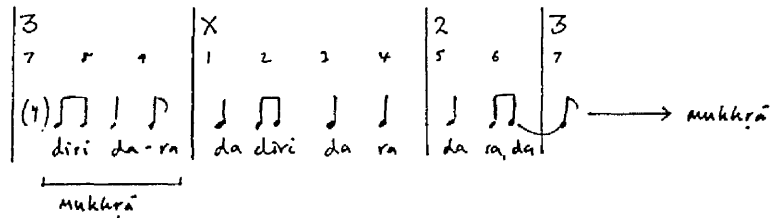


fig 7.13: A basic *bol* pattern for a *mukhrā* *gat* by DC in *rāg rāgeśrī*, *matta tāl*.

In this performance there is also little variation, but the *antarā* is improvised and does not use this *bol* pattern. The pattern is very similar to the *jhaptāl* pattern above, and may be regarded as an adaptation of the same, omitting one *mātrā* (m.5).<sup>25</sup>

The construction of these *gats* is obviously based on the principles described above. The basic difference is that one possible variant of the final 3-*mātrā* group has become fixed (there is also a degree of syncopation across the last two *vibhāgs*). This is employed as a *mukhrā*, so that improvisations and *tihāīs* may end at or before the *mukhrā* instead of at *sam*. Another feature of these *gats* is that there is less variation of the *bol* pattern than is common in the simpler *gat* types, presumably because the structure of the *gat*, being more complex, becomes more important and thus less susceptible to change.

<sup>24</sup>Encouraged by the *tablā* maestro Pandit Shankar Ghosh.

<sup>25</sup>Cf. fig 7.17.

### Modifications to bol-derived structures

This analysis has employed reconstructions of *bol* patterns extensively to illustrate rhythmic structures; there are however occasions where other factors must be taken into consideration, either because a *bol* is used as an ornament (and is therefore not an essential part of the rhythmic structure), or because notes articulated by left hand techniques are sufficiently clear to be regarded as additions to the syllabic structure. The first case is exhibited, for example, in the following bols;



fig 7.14: An example of a *bol* used to produce an ornament.

The latter case is not usually a major consideration, since in this style ornamentation is usually relatively simple and direct. An example is illustrated below, where the *bol* “da - ra, da - ra” is modified by a *kṛntan* (‘pull-off’) which produces an extra articulation as follows;



fig 7.15: An example of enhancement of syllabic structure by left hand ornamentation, in this case a *kṛntan*.

### Gats: summary

The main types of *madhya lay gat* performed by DC may be summarised as follows;

- Simple *gat* (*tāl*-division based); the structure is based on the *tāl*'s structure, as expressed in both clap pattern and *ṭhekā*. Basic patterns for 2 (“da ra”), 3 (“da ra da”), 4 (“da ra da ra”) or 5 (“da ra, da ra da”, ie. 2+3) *mātrā* groups may be varied by one or more of the following processes; stroke doubling, syncopation within the *vibhāg*, and hemiola (3 becomes 1 1/2 + 1 1/2).

- Syncopated *gat*, as above, but there is also syncopation across the *vibhāg* divisions (this type is especially common in *rūpak tāl*, where most lines are two cycles long).

• *Mukhṛā gat*; the structure is similar to the simple *gat*, but a pattern of “di ri,da -ra” becomes fixed as a 2 1/2 *mātrā mukhṛā* (and is often preceded by a syncopation across the previous *vibhāg* division). There is less *bol* variation in this type.

In most cases, as above, the *gat* structure may be clearly delineated by reference to the *bol* pattern employed. This analytical method is in consonance with DC’s own conception of the rhythmic structure, and has the advantage that much rhythmic complexity can be seen in terms of minor transformations (such as displacement of *bols*) with respect to clear syllabic structures.

### 7.3.3: Development in performance

What follows the statement of the *gat* may be described as improvised development on that *gat* (see ch. 4).<sup>26</sup> A number of techniques are employed in this development, but the distinctions between them are not always clear, and it cannot be said that the performance moves through phases defined clearly by those techniques. Rather, the development is structured episodically, with improvised episodes concluded by *tihāīs*. A general trend of acceleration is observed, and the emphasis moves from rhythmic complexity and variety to speed over the course of the performance. Performances end with passages of *sāth saṅgat* (synchronised accompaniment).

In this section examples will be introduced which illustrate the principles expounded above. These are organised, like the performances themselves, roughly in order of increasing *lay*. Firstly will be some examples (figs 7.16-7.19) of possible approaches at relatively low rhythmic densities; following this will be some illustrations of *tāns* at *caugun* and above (figs 7.20-7.24), and the final examples will be of some special *tihāī* varieties (figs 7.25-7.28).

#### Low rhythmic densities: *toḍā*, *laykāri*, *tihāī*

Improvisation at low rhythmic densities may comprise *toḍās*, *vistār*, simple *tāns*, *tihāīs*, and various types of *laykāri*. There is a premium on rhythmic variety and invention at this stage, indeed this is the predominant and most striking feature of this type of *gat* performance

<sup>26</sup>Effectively development of the *rāg* and *tāl* employed, since the *gat* itself encapsulates the basic features of both.





such. The *bol* pattern is clearly generated from the *tāl* structure with some syncopation and cross-rhythmic (*bakra*) features, but certain essential melismatic features of the *rāg* are nevertheless successfully incorporated.

The next two figures illustrate more unequivocally syllabic passages of improvisation, and demonstrate various rhythmic procedures. In both cases *bol* patterns set up by the structure of the *tāl* and *gat* are disrupted by regrouping the *mātrās*, generating cross-rhythmic effects. Both examples include *tihāīs*, and the second includes an example of *viṣam* (fig 7.18, c.11), in which a heavily accented stroke anticipated on *sam* is played half a *mātrā* early (*anāgat*- see 5.2.4). Firstly an example in the 9-*mātrā matta tāl*:

$M = J = 103-106 \text{ mm}$

c.57 

X					2			3		(4)		X
1	2	3	4		5	6		7	8	9		1
J	J	J	J		J	J		J	J	J		J
da	dāri	da	dāri		da-dāri	dara		da	ra	da	ra	

 variation of gat

c.58 

J	J	J	J		J	J		J	J	J	
da	da	da	da		dāri	dara		dara	dara	dara	

 'toḍā'

c.59 

J	J	J	J		J	J		J	J	J	
da-dāri	dara	dara	da-dāri		dara	dara		dara	dara	da -	

 'toḍā' → tihāī

c.60 

J	J	J	J		J	J		J	J	J	
ra, da - ra, da, da - ra,	da - ra, da,	da - ra, da - ra	da		da - ra, da - ra	da - ra, da - ra		da - ra, da - ra	da - ra, da - ra	da	

fig 7.17: An extract from a performance by DC of *rāg rāgeśrī* in *matta tāl*.

This example illustrates a typical combination of 'toḍā' (combining single and double strokes) with a *tihāī*. The *tihāī* is a common *jhaptāl* pattern- hence it starts from the final *mātrā* of the previous cycle, accommodating a 10-beat pattern within a 9-beat cycle.

$$M = J = 142 - 146 \text{ mm}$$

c. 11

X	2	2	4	5	0	7	3	7	10	X	
1	2	3	4	5	6	7	8	9	10	1	
da	ra	ra	ra	ra	da-biri	dara	dara	da -	ra, da		
					A						

c. 12

da	diri	da	ra	dara	da -	ra	da	dara	da -	ra	
B					C						

c. 13

da	ra	da	ru	da	ru	da	ra, da -	ra	da-biri	da, da -	

c. 14

da-biri	dara	dara	dara	dara	da -	ra, da	ra	da -	ra, dara	da	

fig 7.18: An extract from a performance of *rāg bāgeśrī* in *jhaptāl* by DC.

In this piece the early *toḏā* may be described in terms of three sections (A, B, C). A is repeated on the off-beat as B, and then repeated again in abbreviated form as C. The *tihāī* (♩♩♩ × 3) is of a common type in which the accented stroke of the pattern (the third) falls on *khālī* in the first repetition, and on *sam* in the 3rd. The next example is of a passage which features *tigun* (3:1) *laykāī*; it ends with a *tihāī* (which involves a slight adjustment of the pattern between repetitions).

$M = J = 87-11 \text{ MM}$

c.59  $\left| \begin{array}{c} \chi/0 \\ 1 \quad 2 \quad 3 \\ \text{da} \quad \text{ra} \quad \text{v} \end{array} \right| \left| \begin{array}{c} 1 \\ 4 \quad 5 \\ \text{ḍiri} \quad \text{ḍiḍiri} \end{array} \right| \left| \begin{array}{c} 2 \\ 6 \quad 7 \\ \text{da-ra} \quad \text{darada} \end{array} \right| \left| \chi/0 \right|$

c.60  $\left| \begin{array}{c} \text{da-da} \quad \text{da-ra} \quad \text{da-da} \\ \text{ra-da-ra} \quad \text{ḍarada} \quad \text{ḍiri-da-ra} \quad \text{darada} \end{array} \right|$

c.61  $\left| \begin{array}{c} \text{da-ra} \quad \text{darada} \quad \text{radara} \\ \text{darada} \quad \text{radara} \quad \text{darada} \quad \text{radara} \end{array} \right|$

c.62  $\left| \begin{array}{c} \text{da-da} \quad \text{ra-da} \quad \text{darada} \\ \text{ra-da} \quad \text{radara} \quad \text{da-da} \quad \text{radara} \quad \text{da} \end{array} \right|$

1. 2. 3.

fig 7.19: An extract from a performance by DC of *rāg tilak kāmōd* in *rūpak tāl*.

The four examples above (figs 7.16-7.19), illustrate the most common types of development used by DC in the early phases of a *dhrupad aṅg gat* performance- *vistār*, *toḍā*, *tihāīs* and *laykāṛī*. The next section introduces examples from later stages of performances.

### High rhythmic density: *tān*, *tihāī*, *sāth saṅgat*

The early phase of improvisation, described variously as *toḍā* (if the emphasis is on *bol* combinations, as in figs 7.17 and 7.18) or *laykāṛī* (as fig 7.19), or even as *vistār*, approaches *caugun* (4:1), at which point *tāns* come into their own. *Caugun* is the most common *lay* ratio for *tāns* in this genre, although early in the performances brief passages in *chegun* (6:1) and even *āṭhgun* (8:1) are not uncommon (later, the increase in tempo rules out such high ratios). The following examples illustrate some *tāns* in practice: note that the concluding *tihāīs* often feature a reduction in rhythmic density.

The first example below crosses the notional division between *laykāṛī* and *tāns*. The switching of *lay* ratio and techniques seen here, within the overall tendency of acceleration, is typical of this genre.

$$M = J = 96-99 \text{ mm}$$

c.81

X	2	3	4	2	6	7	8	3	(4)	X
1				5				9	10	11
J	J	J	J	J	J	J	J	J	J	J
da	di ri	W	W	di ridiri	W	W	W	dara-dri	dardara	-dridara

c.82

J	J	J	J	J	J	J	J	J	J	J
da	ra	da	ra	da	ra	da	ra	dara	da	ra
				1.		2.		3.		

fig 7.20: An extract from a performance by DC of *rāg jog* in *cārtāl kī savārī*.

The first line above (c. 81) features *tāns* in *caugun*, slightly modified in the last *vibhāg* (the sequence of four strokes is distorted by rests and double strokes). Then the rhythm switches to 3/4 *mātrā* units (  $\text{♩}$  ), which could be described as a *lay* ratio of 4:3, and a simple *tihāī* (albeit modified to ensure the correct length) completes the episode.

The example below is rhythmically rather more complex. A long *tān* is played in *caugun*, but it is divided by accents into contrametric (*bakra*) groupings.

$$M. = J = 111-116 \text{ mm}$$

c.160

X 0	2	3	1	5	2	7	X 0
1			4		6		1
J	W	W	J	J	J	J	J
			4	4	4	3	3

c.161

J	J	J	J	J	J	J	J
2	2	3	3	2	2	3	3
1. b.				c.		d.	

c.162

J	J	J	J	J	J	J	J
3	2	2	3	2	2	3	3
2.							


c.163

J	J	J	J	J	J	J	J
3	3	3	3	3	(5)	3	3

c.164

J	J	J	J	J	J	J	J
3	3	(5)	3	3	(5)	3	3
1.		2.		3.			

fig 7.21: An extract from a performance by DC of *rāg bhīmpalāsī* in *rūpak tāl*.

The *tān* (in c. 160) sets up the pattern of 4+4+4+4, then shifts to the contrametric pattern of 3+3+2+2 which is repeated five times (a - e), before reverting to simple 3s. The last cycle (c 164) comprises a *tihāī* (   $\times 3$ , a grouping of 3+3+5).

Two illustrations of *chegun tāns* follow- which demonstrate both that the faster *lay* ratios are used in shorter bursts, and that the close relationship with the *tāl* may slip slightly in practice. In fig 7.22 below the first line contains two short bursts of *chegun*, and the second line a longer *tān* and *tihāī*.

$$m. = \int = 96-97 \text{ mm.}$$

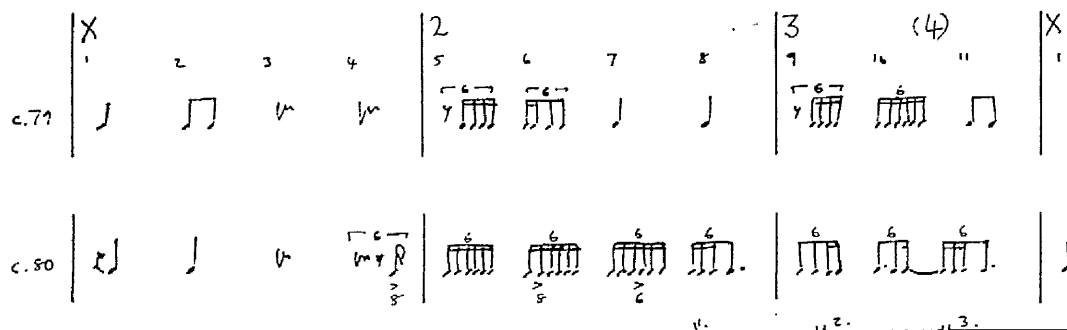


fig 7.22: An extract from a performance by DC of *rāg jog* in *cārtāl kī savārī*.

The *tān* (c.80) contains 22 notes, grouped 8+8+6 in *chegun* (6:1). It has been transcribed in this way because DC has started just before m.5; a phonetic transcription would look more complicated than this since the speed is not entirely consistent (at least when listened to at 1/2 speed: at full speed fluctuations are not noticeable).

Figure 7.23 shows another fragment of *chegun*, which presents a similar dilemma.

$$m. = \int = 108 \text{ mm}$$

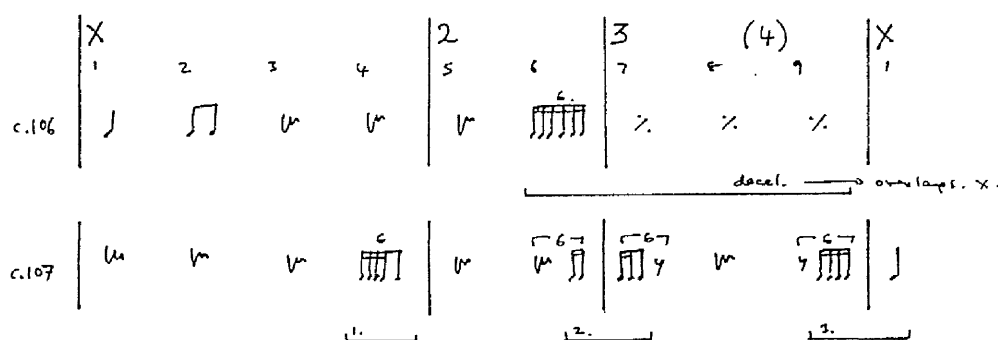


fig 7.23: An extract from a performance by DC of *rāg rāgesrī* in *matta tāl*.

The *tān* is in *chegun*, but is played fractionally below the required speed and overshoots *sam*. This is not in fact an error, rather it is a common practice for long,

descending *tāns* to overshoot *sam* in this manner in this style of performance. A *tihāī* once again completes the example.

The final *tān* example here includes passages in both *āṭhgun* (8:1) and *chegun*. The first two lines include short *tāns* in *āṭhgun*, concluded with a *tihāī*. The third line reverts to *chegun*, a decrease in *lay* ratio, again concluding with a *tihāī* (the use of a rest between elements 1 & 2 but not between 2 & 3, once again confirms the improvised nature of these *tihāīs*).

$m. = \downarrow = 99 \text{ mm}$

The notation consists of three horizontal lines, each representing a different section of a performance. Each line is divided into measures by vertical lines. Above the measures are numbers 1 through 11, likely indicating beat counts or measure numbers. Below the measures are various rhythmic symbols: dots, strokes, and dense clusters of lines. Some measures are grouped together with brackets and numbers below them. The first line is labeled 'c. 89', the second 'c. 90', and the third 'c. 91'.

fig 7.24: An extract from a performance by DC of *rāg jog* in *cārtāl kī savārī*.

These examples (figs 7.20-7.24) have illustrated some of the rhythmic features of *tāns* and *tihāīs* in performance, in the latter stages of DC's *madhya lay gats*. They include passages at 4:1, 6:1 and 8:1 (and a *tihāī* at 4:3), and different features are observed at each *lay* ratio. At 4:1 rhythmic patterns are modified by *bakra* (cross-rhythmic) accents, by stroke doubling and rests; these features are used progressively less as the *lay* ratio is increased. At 8:1 (where used) *tāns* are very short- probably because of the technical difficulty of sustaining stroke densities of almost 800 *bol/min*, and the corresponding left-hand movement. Thus the shift from rhythmic complexity and variety to sheer speed may be continued within the *tān* phase; it is also notable that *tihāīs* tend to reverse that shift, the greater rhythmic complexity of many *tihāīs* being accompanied by lower rhythmic densities.

### Special *tiḥāīs*

The development process is sufficiently flexible to allow other rhythmic features to come into play. In this genre, these include a number of special *tiḥāī* varieties, some of which are especially suitable for ending performances. This next development episode features a variety of 'anāgat' *tiḥāīs*, which end immediately before *sam*. Three such are illustrated below;  $M. = J = 93-96$

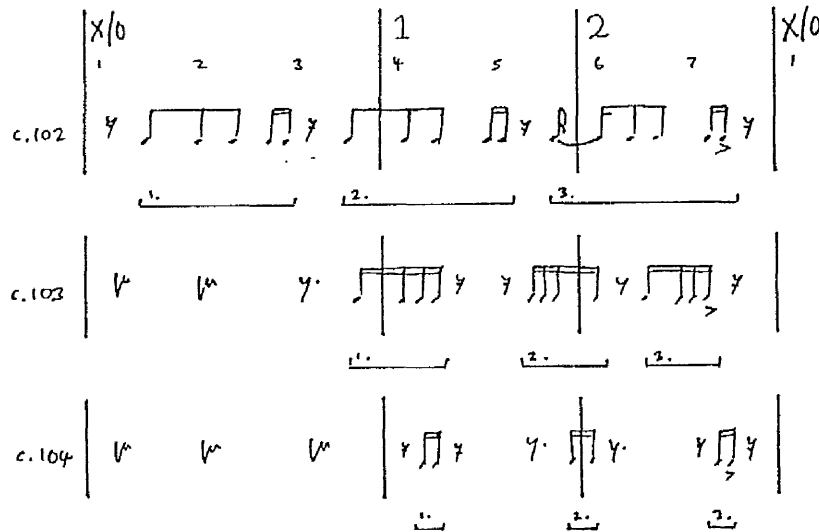


fig 7.25: An extract from a performance by DC of *rāg tilak kāmōd* in *rūpak tāl*.

A process of rhythmic development is discernible here, since the *tiḥāīs* become progressively shorter- indeed, that of c.104 is clearly a variant of the previous cycle's. In another special type of *tiḥāī*, each of the three repetitions of the rhythmic formula is played at a different *lay* ratio. The following is an example of this type, in which a simple phrase (♫) is played at double, one-and-a-half times and single speed (effectively 4:1, 3:1 and 2:1) against the *mātrā* pulse. This may be described as an application of the concept of *yati* (see 5.2.3).

$$M. = J = 159 \mu m$$

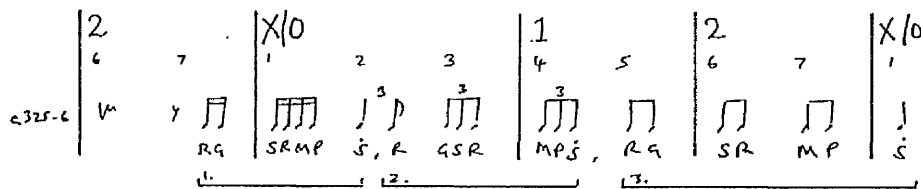


fig 7.26: An extract from a performance by DC of *rāg tilak kāmōd* in *rūpak tāl*.

Two other special *tiḥāī* types may be employed, especially to end performances- namely the *cakkardār* and *nauhār tiḥāīs* (see 5.2.4). In this example of a *cakkardār* the first



element of the *tiḥāī* falls one *mātrā* short of *sam*; this is adjusted by the use of two half-*mātrā* rests, and the final stroke of the third repetition lands on *sam*.

$m = \int = 144 - 147 \text{ mm}$

c.71

c.72

c.73

fig 7.27: An extract from a performance by DC of *rāg bāgeśrī* in *jhaptāl*.

An illustration of a *nauhār tiḥāī* follows;

$m = \int = 155 \text{ mm}$

c.93-4

c.95

① ② etc. = number of 'da' stroke.

fig 7.28: An extract from a performance by DC of *rāg bāgeśrī* in *jhaptāl*.

Most performances of *madhya lay gats* conclude with a passage of *sāth saṅgat*, in which the *tablā* player attempts to play the same rhythms as the *sitārist*, simultaneously. To do so, he requires both extremely quick reflexes and sufficient experience to be able to predict what is likely to be played. Top *tablā* players may achieve a remarkable degree of synchronisation, thanks to these qualities. DC plays largely *caugun tāns* in such sections (with some strokes doubled as in *toḍās* perhaps), and concludes his performances with either *cakkardār* or *nauhār tiḥāīs*.

### 7.3.4: Lay in performance

Chapter 3 discussed the concept of *lay* in Hindustani music- its relationship to the concepts of 'tempo' and 'rhythmic density' and to the ratio between these two categories. It also discussed the near-universal tendency of acceleration of *lay* in Hindustānī music (see also ch 4), distinguishing between the acceleration of tempo itself and that of rhythmic density (ie. increase in *lay* ratio).

*Madhya lay gat* performances in DC's *dhrupad āṅg* show a good deal of consistency in all these areas. It is convenient, in all cases, to regard *tāl* as the type of metric structure described in 1.4.1, with the *mātrā* as pulse level, the *āvart* as the lowest metrically significant level, and the *vibhāg* an intermediate (and in this genre, irregular) pulse. The integrity of this structure is tested at fast tempi (typically 160-180MM) as such a tempo becomes a little fast to count. However, since the next lower level (*vibhāg*) is irregular in these *tāls*, the tempo has to be very fast indeed for a shift in perceived pulse level to the *vibhāg* (such as that described in 3.1.2 and illustrated in fig 3.4) to be effected.

At the other end of the scale, as was noted in 3.2.1, most *gats* in *rūpak tāl* (and some in other *tāls*) consist of indivisible 2-*āvart* lines, which raises the possibility of an extension of the metric structure to a lower (2-*āvart*) level. However, since this 2-cycle level would apply only to the statement of the *gat*, and the integrity of this 2-cycle unit does not override other performance considerations in development phases, it is a relatively unimportant phenomenon; thus we can safely take the *āvart* as the lowest truly significant metric level.<sup>28</sup>

The metric pulse level is thus taken as the *mātrā*: this rate varies in *madhya lay gat* performance between 85 and 180MM, and accelerates in the course of the performance over most (although not necessarily all) of this range.<sup>29</sup> Similarly, rhythmic densities accelerate over the course of a performance. Approximations of rhythmic densities may be

<sup>28</sup>See 3.2.2, and Stewart [1974:396]. Stewart's theory that since *rūpak tāl* compositions were 2-cycles long, it was effectively a 14 *mātrā* symmetrical structure is borne out- but only for the statement of the *gat*. It is possible that in time *rūpak tāl* will evolve into a symmetrical 14 *mātrā tāl*, but by no means certain.

<sup>29</sup>The only exception I have heard to this rule is to be found in DC's commercial recording of *rāg bāgēsri* in *jhaptāl*. This opens at 140MM and accelerates to around 160MM; the reason for this relatively narrow tempo range is that to accommodate the *rāg* within the 30 minute cassette, DC allotted only 6 minutes to the *gat* and the remainder to *ālāp* and *jor*. Since the normal *gat* performance lasts 15-25 minutes, he obviously felt that the performance stages had to be compressed, and beginning the performance at a faster *lay* was one means to this end.

made at all stages of *madhya lay gat* performances, largely for the purpose of comparison with those of *vilambit gats*. As indicated in 3.2.1, maximum rhythmic density figures may be used in analysis of *laykāṛī* and *tān* sections, and average figures for the earlier stages of performance, where *lay* ratios are unclear.

The reason for calculating and presenting rhythmic density data in this manner, is that it provides a clear graphic illustration of the stepwise increases in rhythmic density which occur in this music, as well as facilitating a quantitative comparison between *gat* types. By combining such charts with those for metric tempo, it can be clearly demonstrated how the acceleration of *lay* in this genre is effected by a combination of *tāl* acceleration and increases in *lay* ratios (*laykāṛī*), as in fig 7.30 below.

An interesting aspect of the *lay* is the acceleration pattern, which as was mentioned above is typically a combination of the traditional paradigm- steady *tāl*/increase in rhythmic density- and the acceleration of the *tāl* itself. In most cases the first half or so of the performance exhibits the former type of acceleration (ie. of the rhythmic density only), and once the performance moves on to *caugun tāns*, stepwise and gradual acceleration of the *tāl* itself takes over.

Thus the acceleration patterns confirm the rhythmic implications of the mixture and progression of techniques employed in the performance. In the earlier, *toḍā/laykāṛī* period, tempo is fairly stable and rhythmic density increases (as per the traditional, syllabic model- see 1.4.2); in the later *tān* phase, stepwise increases in tempo occur (as in *khyāl*- see 3.2.3, fig 3.13). These acceleration patterns are quite distinct from those of vocal *dhrupad*<sup>30</sup>, and confirm a clear distinction in rhythmic practice.

These observations are illustrated below by means of two charts, the first a simple tempo chart for a *jhaptāl gat* performance (fig 7.29), and the second a combined tempo-cum-rhythmic density chart for the same piece (fig 7.30).

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<sup>30</sup>See fig 3.15.

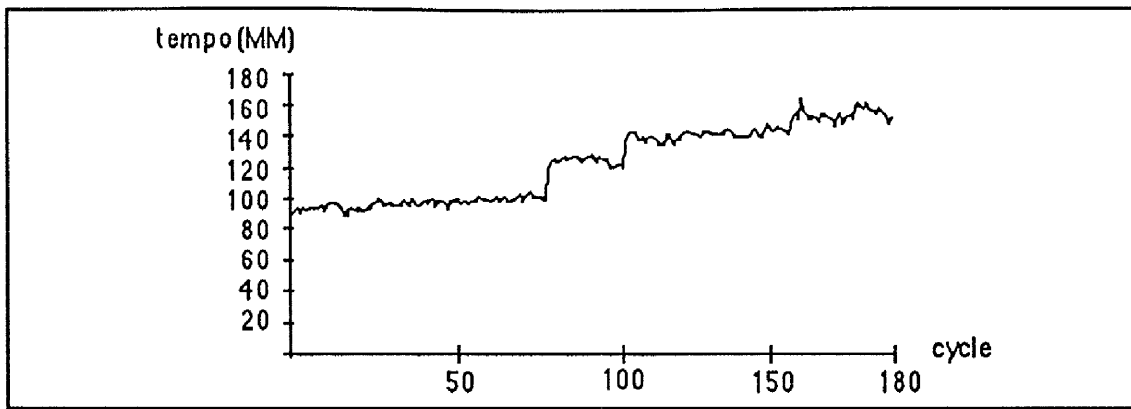


fig 7.29: Lay (tempo) chart for a performance by DC of *rāg pūriyā* in *jhaptāl*.

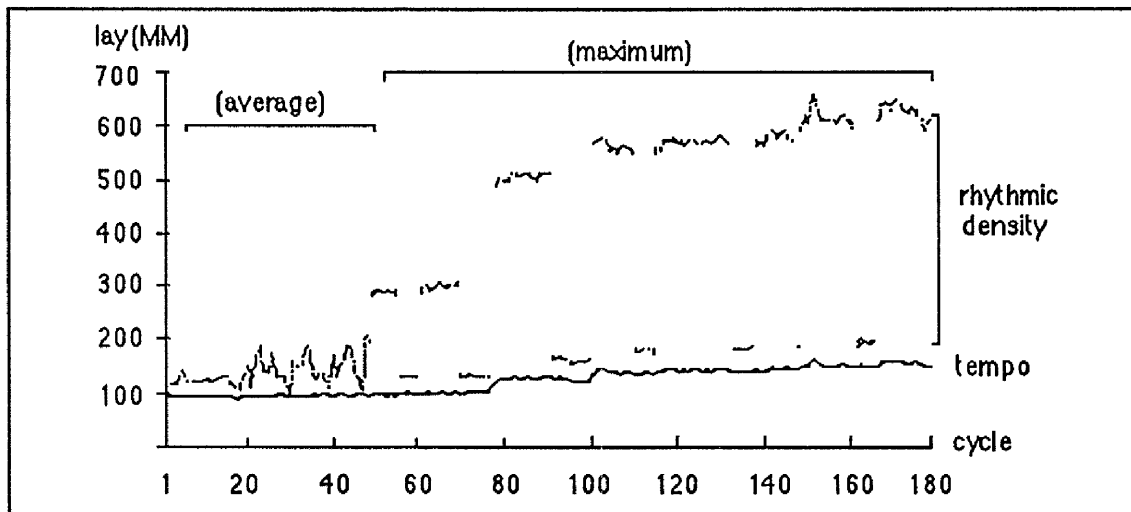


fig 7.30: Lay (tempo and rhythmic density) chart for a performance by DC of *rāg pūriyā* in *jhaptāl*.

Fig. 7.29 shows clearly how the tempo increases by two steps at (c.78 and c.101)

Fig. 7.30 illustrates the fact that in the portion of the performance in which the tempo is steady (c.1 - c.77), the rhythmic density increases- and that this increase continues after the stepwise tempo increase has been effected (in the *tān* section). Although a variety of patterns may be observed in practice, virtually all DC's *madhya lay gat* performances share these *lay* features; acceleration is effected by a combination of one or more tempo increases, with a stepwise increase in *lay* ratio.

#### 7.4: Summary

The *gats* considered in the foregoing section are medium-fast tempo instrumental compositions as played by *sitārist* Deepak Choudhury, intended to complement *ālāp-jor* performances in a complete '*dhrupad aṅg*'. They are set in irregular *tāls* such as *jhaptāl* or *rūpak tāl*, and occasionally *cārtāl kī savārī*, *matta tāl*, *pañcam savārī tāl* or *dhamār tāl*. Typical performances of these *gats* last 15-25 minutes, and they may be further complemented by *drut gats*.

The tempo increases during that time from 85-100MM to 160-180MM, combining a certain amount of upward drift with clear stepwise increases. Rhythmic density also increases, both with tempo and by stepwise increases in *lay* ratio. Typical *lay* ratios are *dugun*, *tigun*, *caugun* (2:1, 3:1 & 4:1) in the *toḍā/laykārī* phase, and *caugun* (plus occasionally *chegun* or *āṭhgun*, 6:1 or 8:1) in *tān* sections.<sup>31</sup> *Laykārī* is further complicated by combinations of single and double strokes, cross-rhythmic accents and many kinds of syncopation. In cases where the rhythm either shifts between *lay* ratios or different techniques are combined in such a way as to confuse any sense of rhythmic purpose, this type of rhythm is called '*kūṭ lay*'.

The *gats* themselves are usually simple in construction, and follow the *tāl*'s structural divisions. They consist of fixed *sthāyīs* of one or two lines (in which case the second line may be called *mañjhā*), each of which may be composed of one or two cycles. *Antarā* sections may be pre-composed, with the same rhythmic structure as the *sthāyīs*, or improvised as part of the development process, in which case they may have somewhat looser structures. Some *gats* however, particularly in *rūpak tāl*, show a limited degree of syncopation across the *vibhāg* divisions. A relatively new type of *gat*, created by DC himself, employs a 2 1/2 *mātrā mukhrā*, analogous to that of the *masītkhānī gat* (see ch. 8 and 4.3.4).

<sup>31</sup>More complex *laykārīs* are also used, albeit rarely, either using some intermediate *lay* ratio (eg. 5:2, 7:2 or 4:3), or shifting back and forth between adjacent levels.

Development is episodic, with episodes divided by *tablā* solos. Accompaniment is by elaborated *ṭhekā* on the *tablā*, except for *tablā* solos and a brief section of *sāth saṅgat* at the end of the performance. Episodes in low rhythmic densities are more complex rhythmically, combining simple *dugun tāns*, various types of *laykāri* and fragments of *toḍā*-type *bol* patterns, with occasional *vistār*-like melisma. In higher rhythmic densities, rhythm becomes smoother and the interest lies in grouping and accent patterns, and in the ubiquitous *tihāis* (which tend to be more fragmented rhythmically than the *tāns* and involve a reduction in *lay* ratio). Improvisation may be constructed by a conceptual division of the *tāl*; (by cycle or by *vibhāg*), or temporarily free of *tāl* restraint. Episodes and most sub-episodes of improvisation are ended by cadential *tihāi* patterns.

Overall the rhythmic style of the '*dhrupad aṅg*' *madhya lay gat* represents a hybrid in several senses, in particular;

- *Tāls* are derived from both the *tablā* and *pakhāvaj*,
- The accompaniment model is a blend of those of *dhrupad* and *khyāl*; the *ṭhekā* of *khyāl*, and the drum solo over repetitions of the *bandiś* (and the *sāth saṅgat*) from *dhrupad*.
- The acceleration model combines increases in rhythmic density over a constant *tāl* structure, with acceleration of the *tāl* itself.

The rhythmic style is basically syllabic (the occasional melisma is easily subsumed within the syllabic framework). The mode of rhythmic organisation is also syllabic (1.4.2), although where rhythmic patterns are clearly derived from the *tāl*'s divisions there may be a tendency towards a more qualitative type of organisation (see 1.4.4) with the influence of the *ṭhekā*'s accentual pattern strongly felt.

The variety of techniques used illustrates the diverse influences felt on this genre (*dhrupad*, *khyāl*, earlier instrumental *gat* forms, *tablā* and *pakhāvaj* solo repertoires, South Indian music etc.), while the considerable degree of synthesis of these techniques shows that this relatively modern style must be treated in its own right as a major genre of Hindustānī music. The performances of DC, as illustrated above, demonstrate an astonishing rhythmic mastery and invention, which marks him out as a leading exponent of this genre.

These findings illustrate how it is possible to characterise this *gat* form in rhythmic terms to a remarkable degree. This fact is of considerable significance, since it implies that rhythmic analysis may be a powerful tool in all kinds of studies- of genre, style, technique and so on- in Indian music. The following chapter will apply the same analytical techniques to a second type of *gat*, the *vilambit gat*; once that is complete, it will be possible to compare the characteristics of the two forms, and consider the question of their apparent analogies with *dhrupad* and *khyāl gāyakīs* (ch. 9).

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## Chapter 8: The *vilambit gat* (*khyāl aṅg*)

### 8.1: Introduction to the ‘*khyāl aṅg*’

This section is concerned with DC’s ‘*khyāl aṅg*’, and in particular with the rhythmic features of the *vilambit gat*, a compositional form which is employed as one of the cornerstones of the *sītār* repertoire in all *gharānās* and styles. In Maihar *gharānā* practice, the *vilambit gat* is preceded by a brief *ālāp* or *aochār* (usually less than 5 mins long<sup>1</sup>), and followed by a *drut gat* in *tīntāl* or occasionally *ektāl*. The *aochār-vilambit gat-drut gat* combination forms a complete ‘*khyāl aṅg*’, analogous to the (*ālāp*)-*barā khyāl-choṭā khyāl*, and in concert programmes this *khyāl aṅg* usually follows the *dhrupad aṅg* described in chapter 7 (see fig 6.2).<sup>2</sup> The following table summarises the analogy between *khyāl* vocal and *sītār* forms.

	<i>khyāl</i> (vocal)	“ <i>khyāl aṅg</i> ” <i>sītār</i>
<i>anibaddh</i> forms:	<i>ālāp</i> (optional)	<i>aochār</i>
<i>nibaddh</i> forms:	<i>barā khyāl</i>	<i>vilambit gat</i>
	<i>choṭā khyāl</i>	<i>drut gat</i>

fig 8.1: A comparison of DC’s ‘*khyāl aṅg*’ for the *sītār* with a common *khyāl* performance scheme on which it is modelled.<sup>3</sup>

The parallel between the *vilambit gat* and *barā khyāl* implies that it is a slow tempo form, suitable for melismatic (quasi-free rhythmic) *rāg* development. The fuller implications of this analogy will be examined in the course of this chapter; for now, to give a slightly more detailed comparison between vocal and *sītār* forms, the following table summarises information on the use of *tāls*, and on actual performance tempi in the table below.

<sup>1</sup>In the sample of five performances referred to here, times ranged from 45 sec to 4 min 50 sec.

<sup>2</sup>*Vilambit* and *drut gats* may also be performed in *thumrī*- or *dhunī* *rāgs*, with some adjustments to performance practice, in a hybrid *khyāl-thumrī aṅg*; this however is beyond the scope of this section.

<sup>3</sup>Nb. there are other ways of structuring *khyāl* performances, which are not immediately relevant here.

	barā khyāl (vocal)	"khyāl aṅg" sitār
slow tempo:	ektāl, jhūmrā tāl, tilvāḍā tāl, tīntāl	tīntāl <sup>4</sup>
	11-60 MM	32-92 MM
fast tempo:	tīntāl, ektāl	tīntāl, ektāl
	170-300 MM	234-670 MM

fig 8.2: A comparison of the *tāls* and tempi used in the performance of *vilambit*- and *drut* *gats*, and their analogous vocal forms.<sup>5</sup>

While the *tāl* used in the *sitār*'s *khyāl aṅg* (*tīntāl*) is also used in *khyāl gāyākī*, the principal *khyāl tāls* used in very slow tempi- *ektāl* and *jhūmrā*- are not heard in instrumental *gats*. Once again the tempo ranges are considerably higher in instrumental than in vocal music. As was the case in chapter 7, this throws some doubt on the derivation of the *vilambit gat* from its supposedly analogous vocal form. The following sections will deal with the rhythmic features of the *vilambit gat* as performed by DC, in a manner similar to that applied to *dhrupad aṅg madhya lay gats* in chapter 7, in order that a more complete picture may be built up.

## 8.2: Principles of the vilambit gat

The great majority of *vilambit gats* may also be termed '*masītkhānī gats*', since they follow a standard stroke pattern for *tīntāl* compositions, whose invention is credited to the 18th century *sitārist* Masit Khan (alternative models do exist for *vilambit gats*, but they are rarely heard<sup>6</sup>). It is not necessary to discuss its history in full here; however, it is worth making the point that the *masītkhānī gat* (also referred to as the *pachvā*- or Delhi *bāī*), was originally a medium tempo composition type, and that its performance practice has undergone considerable change in becoming the slow tempo, *khyāl*-influenced *gat* we hear today.<sup>7</sup>

<sup>4</sup>Although DC only plays *vilambit gats* in *tīntāl*, there have been experiments in adjusting *masītkhānī* type patterns to other *tāls* such as *dhamār* and slow tempo *āṛā cautāl*, by Pt. Ravi Shankar in particular

<sup>5</sup>The *sitār* figures apply to DC only, the vocal measurements to a sample of performances by singers of different *gharānās*.

<sup>6</sup>See Bhattacharya [1979:204, 207], or the notations in Maniram [1913] or Hamid Husen Khan [1936].

<sup>7</sup>According to Slawek [1987:18, quoting from earlier sources] and Dick [1984:394], it was originally developed by means of *bīn*-style *toḍās*, *jhālā* and so on. See also Dhar [1989:165].

According to Maihar tradition, the slowing down of the *masītkhānī gat* was largely the responsibility of its founder Ustad Allaiddin Khan<sup>8</sup>; musicians following the Imdadkhānī *gharānā* evidently credit Ustad Imdad Khan (1848 or 1858- 1920<sup>9</sup>) with this same development.<sup>10</sup> Whatever the truth, it is clear that the *masītkhānī gat* was deliberately slowed down under the influence of *baṛā khyāl* practice (a similar movement to slower tempi had occurred previously in *khyāl* itself- see 1.4.3). Much of the following rhythmic analysis makes more sense in the light of this observation.

The *vilambit gat* then is a slow tempo instrumental composition, somewhat influenced in performance practice by *baṛā khyāl*, to which it is held to be roughly analogous. Thus in contrast with the *dhrupad āṅg*, the greater part of the *rāg* development in the *khyāl āṅg* takes places not in *ālāp* (although a residual, abbreviated *ālāp* remains), but within the *nibaddh* section- the *vilambit gat*. Also parallel with *khyāl* practice, the latter part of the *vilambit gat* development consists of fast *tāns*, with the performance as a whole accelerating in both metric tempo and rhythmic density.

In common with DC's *madhya lay gats*, the development of his *vilambit gats* is arranged episodically, with episodes separated by *tablā* solos. Also in common with the *madhya lay gats*, there is an overall tendency to accelerate, and various techniques may be employed in development, usage of which is at least partly determined by the *lay*. In the early stages of development, the slow tempo accommodates a relatively melismatic style (more so than that found in *madhya lay gats*, for example), and this stage is dedicated largely to *rāg* development (*vistār*, *baṛhat*). The rhythm is relatively free at this stage, but crystallises into recognisable syllabically derived forms as the rhythmic density increases.

From this point, the rhythmic density moves into a '*laykāri*' phase, in which the *lay* ratio moves through several levels. The principal levels are 4:1 (*caugun*), 5:1 (*pāñcgun*), 6:1 (*chegun*), 7:1 (*sātgun*) and 8:1 (*āṭhgun*); one or more levels may be omitted (usually 5:1 and/or 7:1), and the actual usage in any performance is dependent on the tempo, the expression of the *rāg*, and any time-limits on the performance. By the time a level of 8:1 is

<sup>8</sup>Slawek quotes Pt. Ravi Shankar as crediting both his guru Allaiddin Khan and *sitārīst* Rameshwar Pathak for this development [1987:19].

<sup>9</sup>According to Hamilton [1989:163].

<sup>10</sup>Cf Hamilton on the "*ādhunīk*" *masītkhānī gat* [1989:eg 74, 175].

reached, the *tān* stage has been established, and the second half<sup>11</sup> of each performance is taken up largely with *āṭhgun* (8:1) *tāns*.

The distinctions between the formal categories ‘*vistār*’, ‘*laykāri*’ and ‘*tān*’ are, it should be noted, by no means clear. *Vistār* does not give way abruptly to *laykāri* in *caugun* (4:1); rather, the quasi-free rhythm of the *vistār* begins to crystalise out at this *lay* ratio (or often only at *pāñcgun* or *chegun*). Similarly, *laykāri* does not give way to *tāns* once a level of 8:1 is reached: indeed the two terms are not mutually exclusive, and depending on the *lay* and the regularity of the surface rhythm, what is played at any of the lower speeds may also be described as ‘*tāns*’, and *tāns* may be described as containing an element of ‘*laykāri*’. A similar absence of clear distinctions between formal categories is typical of most Hindustānī genres, including *khyāl* (vocal)<sup>12</sup>, as well as the *dhrupad āṅg sitār* described above (ch 7).

Apart from the *tablā* solos which punctuate the *sitār*’s episodic development, the accompaniment consists almost entirely of elaborated *ṭhekā*, with no *sāth saṅgat* and little substantial interaction between soloist and accompanist.<sup>13</sup> Most *tāl* cycles in the development phase may be regarded as self-contained ‘sub-episodes’ in a sense, since most are concluded with some type of cadential pattern; after several such cycles, at a point of the soloist’s choosing, he may decide to relinquish the spotlight in favour of the *tablā* player, for solos lasting usually 1 or 2 cycles.

The performance of the *vilambit gat* will be discussed below in more detail, in a manner similar to that employed in chapter 7, on the *madhya lay gat*. Thus it will cover in turn;

- *tāl*; the structure and features of *vilambit tūntāl*,
- *gats*; the construction of the *masītkhānī gat*, its modification and variation in performance,
- development in performance (with examples in transcription), and lastly

<sup>11</sup>The proportion varies in fact between 27 and 58%, in my sample of 5 performances.

<sup>12</sup>An unwillingness to come to terms with this fact leads to misleading analyses in such works as that of Wade on *khyāl*. She leads the reader to believe that the categories *ālāp*, *tān*, *bolān*, *bolbāṇṭ*, *sargam* and *nom-tom* are mutually exclusive performance stages, confusing distinctions of text use, *lay* and rhythmic style [1984a:27ff].

<sup>13</sup>There is of course a constant interaction between soloist and accompanist in any performance situation, but this refers to the lack in DC’s *vilambit gat* of, for example, immediate repetition of what has been played by the soloist by the accompanist, or synchronised accompaniment, such as may occur in *dhrupad*.

- lay in performance.

### 8.3: The vilambit gat in performance

#### 8.3.1: Tāl

All DC's *vilambit gats* are performed in *tīntāl*, whose structure and *ṭhekā* are illustrated below;

*tīntāl* : 16 *mātrās*, 4+4+4+4

X	2	0	3	X
dhā dhin dhin dhā	dhā dhin dhin dhā	dhā <i>tin tin tā</i>	<i>tā</i> dhin dhin dhā	dhā

fig 8.3: *Tīntāl*, *ṭhekā* with *khālī bols* italicised.

As was mentioned above, the *tablā* player repeats this *ṭhekā* in a considerably elaborated form. The manner of elaboration varies according to the specific style of *tablā* playing; below is an example of the type of elaboration which may be employed.

X	2	0	3	X
dhā--kra dhī--kra dhīdhī dhā-ti-t	dhāge dhī dhedhe dhā-ti-t	tā-traka tī-tātā tā-tatī-ta tātātīta	tā-tīta tā-kratītā kiḍanagatirakīta takatāḍatirakīta	dhā

fig 8.4: An example of elaborated *tīntāl ṭhekā*, credited to Ahmedjan Thirakwa (from Joshi 1981:1).

It is worth noting two principal differences from those *tāls* used for *madhya lay gats* in the *dhrupad āṅg*. Firstly, each *vibhāg* of *tīntāl* consists of the same number of *mātrās*, and secondly, the bols of the *ṭhekā's khālī* section do not coincide exactly with the *tāl's* theoretical *khālī* section (see ch. 2). The significance of these differences will be considered in more depth in chapter 9.

### 8.3.2: Gat structure

Most *vilambit gats* are based on the *masītkhānī bol* sequence, which features a 5 *mātrā mukhṛā* in its symmetrical 16 *mātrā* pattern (see 4.3.4).<sup>14</sup> The basic *bol* pattern is given below;

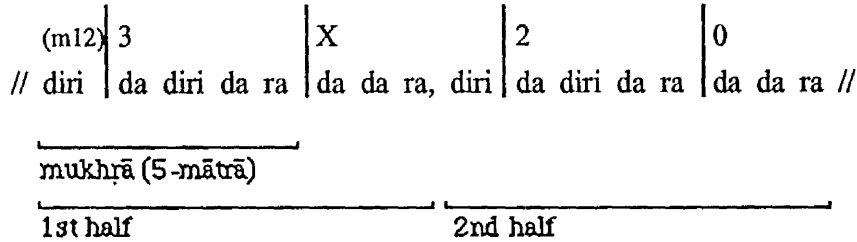


fig 8.5: The basic *masītkhānī gat bol* pattern (cf. fig 4.14).

The anacrusic function of the *mukhṛā*, in preparing for *sam*, is recognised by DC, who suggests that the *gat*'s first *mātrā* (m12) functions as a preparation for the main 4 *mātrā* anacrusis (m13-16). The symmetrical structure of the whole pattern is recognised by Slawek as a (binary) statement-answer structure [1987]. This is a valid observation, certainly in rhythmic and often also in melodic terms, although in practice asymmetrical modifications and embellishments to this *bol* pattern may reduce any sense of a statement-answer hierarchy.

In teaching at an elementary level, most *gats* are given by DC in simple *masītkhānī* form (using the *bol* pattern above in unaltered form), and in three sections- *sthāyī*, *mañjhā* and *antarā*. In DC's performances however, most *gats* feature significant embellishments to the basic *bol* pattern. Moreover, only the *sthāyī* is fixed to any degree; the *mañjhā* is optional, depending on the predominant range of the *rāg*, since the *mañjhā* is a line of lower tessitura. The *antarā* is generally improvised- based, usually, on the *masītkhānī bol* pattern- once the *vistār* has established the high Sa, rather than immediately after the *sthāyī*.

An example of a simple *masītkhānī gat*, as taught by DC, is given below;

<sup>14</sup>Opinions differ on the major influence on the *gat* structure itself (Dick suggests *dhrupad*, Slawek *khyāl*), although in truth there is no equivalent vocal form to the *masītkhānī gat*-it is idiomatic to stringed instruments.

Sa=C  
(actual ~ C#) 12 | 3 13 14 15 16 | X 1 2 3 4 | 2 5 6 7 8 | 0 9 10 11

di ri da di ri da ra da da ra, di ri da di ri da ra da da ra

fig 8.6: A *vilambit gat* in *rāg yaman kalyāṇ*, as taught by DC, using an unmodified *masītkhānī gat bol* pattern.

The following example illustrates the *sthāyī* section of a *masītkhānī gat*, which features modifications to the basic *bol* pattern.

Sa=C  
(actual ~ C#) 12 | 3 13 14 15 16 | X 1 2 3 4 | 2 5 6 7 8 | 0 9 10 11

di ri da di ri da di ri da da da ra, di ri da di ri da ra da da di ri

fig 8.7: A *vilambit gat* in *rāg jaunpurī*, as taught by DC, using a modified version of the *masītkhānī gat bol* pattern.

There may be both melodic and rhythmic reasons for embellishment of the *gat*; on a rhythmic level, the most common type of modification involves stroke doubling and/or syncopation, especially of the *mukhrā*. This is doubtless a response to the fact that the anacrustic function of the *mukhrā* is diminished by the low tempo; the increase of rhythmic density and syncopation increase the cadential/anacrustic effect.<sup>15</sup> The most stable parts of the pattern are *mātrās* 1-3, which usually emphasise a rest-tone (*visrānti sthān*) of the *rāg*; this highlights the tension-relaxation alternation within the *gat* structure.

(m12)	3	X	2	0	
//	diri	da diri da ra	da da ra, diri	da diri da ra	da da ra //
A	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">             _____              tension           </div> <div style="text-align: center;">             →           </div> <div style="text-align: center;">             _____              relaxation           </div> <div style="text-align: center;">             tension           </div> <div style="text-align: center;">             →           </div> <div style="text-align: center;">             _____              relaxation           </div> </div>				
B	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">             _____              1st half (statement)           </div> <div style="text-align: center;">             _____              2nd half (answer)           </div> </div>				

fig 8.8: An illustration of the binary opposition of tension and relaxation on two levels in the *masītkhānī gat* structure.

<sup>15</sup>This type of rhythmic embellishment would not be expected in vocal *khyāl*. In the vocal form, the anacrustic effect is preserved at low tempi by compressing the *mukhrā* into between 1 and 2 *mātrās*, thus retaining a high rhythmic density (see 4.3.5); this can be done if the overall structure of the *bandish* is of limited importance. In the *masītkhānī gat* this overall structure must be retained, therefore the anacrustic effect is preserved by embellishment rather than compression.

Thus the *masītkhānī gat* pattern embodies binary oppositions on two levels (A+B above), besides featuring an anacrusis (the *mukhrā*); it also overlaps the *tāl* structure, increasing the cadential and anacrusic propulsion towards *sam* as well as the sense of cyclicity. It is little wonder, given that it embodies so many important principles of Indian rhythm (cadence, anacrusis, cyclicity), that this *gat* has achieved such predominance in the instrumental repertoire.

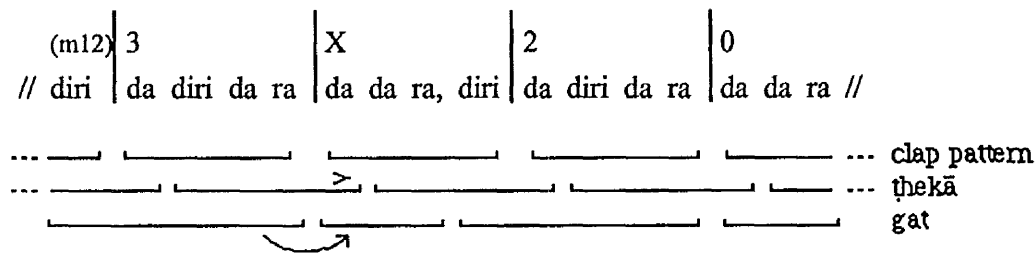


fig 8.9: Three overlapping structural divisions for the *masītkhānī gat*.

As with *bandīśes* in several other genres, *gats* may be varied considerably in performance- indeed it is often unclear exactly how the 'original' *gat* would be defined- but all variations follow the structural guidelines set out above. The most common variations are melodic, substituting alternative *calan* (melodic movement) or ornamentation. Rhythmically, the particular pattern employed for the *mukhrā* may be slightly varied, and the rhythm of *mātrās* 9-11 in particular tends to become a simple pattern such as 'diri diri diri'.

### 8.3.3: Development in performance

The development of the *vilambit gat* is episodic: most cycles are rounded off with a cadential pattern, and after a few cycles (usually 4-10 in practice) episodes are brought to a close in similar fashion. There is a strong trend of acceleration both in tempo and rhythmic density (again, as in the *madhya lay gat*). Development may be discussed in three main sections- *vistār*, *laykāri* and *tān*- although in practice the divisions between these formal categories are not by any means clear (see above). Firstly however, it is necessary to include a note on cadential patterns, since they play an important part in development at every stage.



### Cadential patterns

The two principal cadential structures are the *mukhrā* and the *tihāī*. Although the *mukhrā* is part of the *gat*, and the *tihāī* is an idiomatic rhythmic variation technique employed in improvisation, their practice in the *vilambit gat* is too closely connected for them to be discussed separately. Episodes or sub-episodes of improvisation may be concluded with either a return to the *mukhrā*, with a *tihāī*, or with a combination of the two- in practice a *tihāī* may lead into and possibly elide with the *mukhrā*, or the *mukhrā* itself may be transformed into a *tihāī*.

An example of the former (*tihāī* leading to or eliding with *mukhrā*) will be seen below (fig 8.13, c.8). As for the transformation of the *mukhrā* into a *tihāī*, this is easily effected (at least rhythmically), with only one change of *bol*;

mukhrā	diri	da	diri	da	ra	X da
tihāī	diri	da	diri	da	diri	X da
	1		2		3	

fig 8.10: The transformation of the *mukhrā* into a *tihāī*.

Although in most cases the *bol* pattern of the *gat*'s *mukhrā* is modified in practice, similar *tihāīs* may be easily generated, to cover the same time span. This gives some indication of the close relationship between *mukhrā* and *tihāī*.

### Vistār

As was pointed out above, the *vilambit gat* was created (from an older, medium tempo form) as a compositional form, in order to allow space for a more melismatic, *rāg*-oriented development than had been the norm previously. This deceleration was inspired by the expressiveness of *khyāl* (and to some degree *thumrī*) *gāyakī*, and was made possible by technical improvements in the *sitār*'s construction and playing techniques.<sup>16</sup>

Thus the first phase of *vilambit gat* development is the *rāg*-oriented *vistār* (or *barhat*).<sup>17</sup> This *vistār* may be described as the interpolation of melismatic features into a fundamentally syllabic framework. A sense (an illusion perhaps) of free-rhythm is created at times, through a combination of melisma, rubato and syncopation.

<sup>16</sup>See eg. Dick [1984:399].

<sup>17</sup>Slawek too makes the distinction between *rāg*-oriented and *laykārī*-oriented development [1987:eg.198]

Despite the illusion of free rhythm, the artist remains aware of the *tāl* at all times, and rhythmic analysis reveals a clear structural foundation in a large proportion of *vistār*- a foundation on the *bol* pattern of the *gat* itself, or on the *tāl* structure. In the case of brief passages where such an underlying foundation cannot be clearly established, the most likely explanation is that DC has freed himself temporarily from the restraint of the *tāl*, relying on either cues from the *thekā* or his own 'instinct' to guide him back to *sam*.<sup>18</sup>

It is clear how important the *gat*'s *bol* pattern is, underlying a great deal of the subsequent development. DC, like his guru, teaches his students strict adherence to the *gat*'s *bol* pattern in practice, and one can see why. Once firmly established, the *bol* pattern remains always in the performer's mind, both generating rhythmic structure and assisting time-keeping. Fig 8.11 features a section of *gat* and *vistār* in practice, illustrating these points and the usefulness of *bol* patterns in clarifying rhythmic analysis (see over).

It is clear that a rigorously phonetic transcription<sup>19</sup> of such music would look extremely complex. However, once the principal structural features are recognised (cadential patterns, references to the *gat*'s *bol* pattern, *tihāīs* and so on), the underlying rhythmic structure is greatly clarified. Furthermore, on analysis of the *bol* patterns, it becomes clear that much of the apparently complex rhythm is generated by means of simple distortions (roughly speaking, rubato and syncopation)<sup>20</sup> of patterns derived according to syllabic principles from the *gat* and/or *tāl* structures.

This is illustrated in fig 8.12 (see over). The rhythm of the first five *mātrās* is derived from the *gat* itself, and the last five *mātrās* are used for a *tihāī*.<sup>21</sup> The remaining six *mātrās* in the middle of the cycle (m.6-11) can be seen to be derived as syncopated variants of a set of three 2-*mātrā* patterns. By means of this type of reconstruction it is therefore possible to demonstrate the syllabic organisation of apparently free-rhythmic passages.

<sup>18</sup>By instinct, I mean that with the experience of many years playing these *gats*, it is possible to develop a kind of split perception of the music- following both *tāl* structure and improvisation simultaneously, while keeping the latter free of the controlling metric structure. This facility is, at least in DC's teaching, developed from an early stage, by means of counting exercises and strict insistence on steady *lay* in practice; the ability to play in free-rhythm while retaining awareness of the *tāl* is its logical development.

<sup>19</sup>The term 'phonetic' is used here in the same sense as by Hood [1971:55ff], denoting the indication of the maximum amount of rhythmic and melodic detail in a transcription.

<sup>20</sup>The term 'rubato' is used here in the sense suggested by Scholes; "that type of flexibility which consists of a 'give and take' within a limited unit of the time-scheme" [1991:894]. Cf. the same author's definition of 'syncopation'; "displacement of either the beat or the normal accent of a piece of music" [1991:1002].

<sup>21</sup>Cf. the computation of *tihāīs* in 5.3.2.



[illegible]

fig 8.12: An illustration of the derivation of the surface rhythm in *vistār* from *gat* and *tāl* structures (cf. fig 8.11).

## Laykārī

In DC's *vilambit gat* performance, the link between *vistār* (slow, quasi-free rhythm) and *tān* (fast, clear rhythm) is achieved through a stepped increase in *lay* ratios, loosely referred to as '*laykārīs*'. Such *lay* ratios typically range from 4:1 (*caugun*) to 8:1 (*āṭhgun*). Levels below 4:1 are too low to be rhythmically interesting for extended periods (although brief passages of *tigun* or 3:1 do occur, as in fig 8.11, c.4 above); at low rhythmic densities the rhythm is too fluid and/or distorted for this ratio to be clearly defined. It becomes clear as the rhythm begins to crystallise out, at a level between 4:1 and 6:1, and accelerates up to 8:1, and sometimes briefly up to 12:1.

Thus the *lay* ratios typically used would be at least three of the following; 4:1-5:1-6:1-7:1-8:1-12:1. As described in chapter 5, this *lay* ratio determines the basic pulse rate of the surface rhythm, on which further transformations are carried out to produce rhythmic patterns. Some of these processes are illustrated below, in examples from DC's *vilambit gat* performance (organised in order of ascending *lay*). Firstly, an example of improvisation in *pāñcgun* (5:1).

$\mu. = \text{♩} = 50\text{mm}$

c.24

<div style="border-left: 1px solid black; padding-left: 5px; margin-bottom: 10px;"> X  1      2      3      4    da-da      di      d-r, d-r      - </div> <div style="border-left: 1px solid black; padding-left: 5px;"> 0  9      10      11      12    d, d-r, d-r    d, d-r, d-r    d, d-r, d-r    d, di-r- </div>	<div style="border-left: 1px solid black; padding-left: 5px; margin-bottom: 10px;"> 2  5      6      7      8    -      d, d-r, d      d-r, d-r      d-r, d-r </div> <div style="border-left: 1px solid black; padding-left: 5px;"> 3  13      14      15      16    da      di-r      da-di      di-di-r    da </div>
--	--

ti-hāī
mukh-rā

fig 8.13: An extract of improvised development from a *tintāl vilambit gat* in *rāg bhairavī* by DC.

In this piece, *mātrās* 3-11 inclusive are in *pāñcgun*, of which m.3-6 are in straight 5:1 (*sīdhā*), with the basic or 'default' 2+3 subdivision. This pattern is then disturbed in m.7-8 by cross-rhythmic accents, and m.9-11 comprises a *tihāī*. The second *tihāī* is made up of a simple five note phrase, which elides with the *mukh-rā*.

This second *laykārī* example is in *chegun* (6:1);

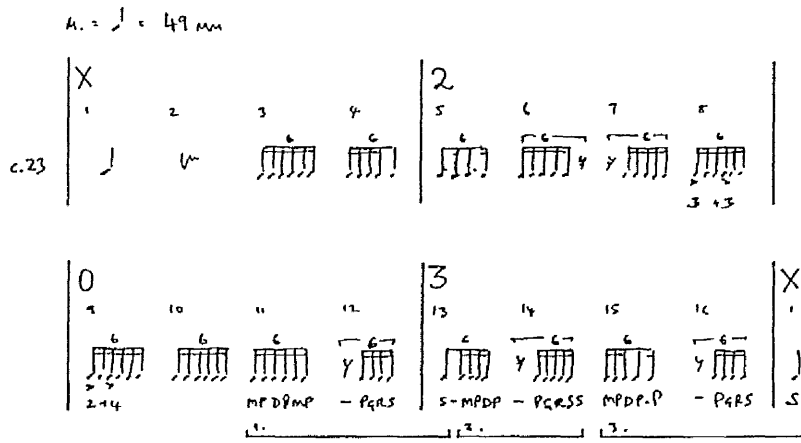
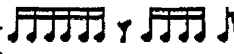

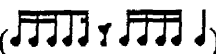


fig 8.14: An extract of improvised development from a performance of a *tīntāl vilambit gat* in *rāg bhaṭiyār* by DC.

Here *mātrās* 3-16 are in *chegun*, and feature a variety of *laykārī* techniques. *Mātrā* 3 is *sīdhā* (grouped 3+3), m.4 includes a rest (3+2+1); m.5 misses the 2nd and 5th strokes but fills the rhythmic spaces by means of *gamaks*<sup>22</sup>; m.7 gives an off-beat effect by omitting the first stroke; m.8 is again straight 3+3 and m.9 is divided 2+4 by means of a dynamic accent on the third stroke.

The final six *mātrās* (m.11-16) are recognisable as a *tihāī* (partly from the melodic material), but one which is considerably transformed as it unfolds. The initial phrase (  ) would overshoot *sam* if repeated 3 times. DC therefore reduces this to (  ) on the second repetition, but this is now too short so he interpolates an extra stroke in order to arrive on *sam* correctly (  ).

The following two examples are in *sāṭgun* (7:1). The first is in 'straight' *sāṭgun*, with a 3+4 or 3+2+2 subdivision throughout.

<sup>22</sup>A *gamak* is a rapid oscillation between two notes, as heard in *khyāl* and also played on the *sitar* by means of lateral deflection of the playing string.

<sup>23</sup>The *lay* ratio of 6:1 is not indicated here- the semi-quavers are in fact sextuplets, and so on.

$M = J = 51 \text{ mm}$

c.36

X	1	2	3	4	2	5	6	7	8
J	J	J	J	J	J	J	J	J	J
			3+2+2	...					

0	9	10	11	12	3	13	14	15	16	X
J	J	J	J	J	J	J	J	J	J	J

1 2 3

fig 8.15: An extract of improvised development from a performance of a *tīntāl vilambit gat* in *rāg bhairavī* by DC.

The *tihāī* in the last two *mātrās* here is a brilliant example of microscopic temporal adjustment. The basic pattern is ( $\text{J J J J J J J J}$ <sup>24</sup>), ie. with *sam* intended to fall on the 4th note of the phrase rather than the 5th; this is a kind of trick or surprise *tihāī* of which DC is fond. However, at a steady 7:1 this would overshoot *sam* by one note ( $6+6+3=15$  pulses, but  $2 \text{ mātrās} \times 7 =$  only 14). This problem is overcome by a minute acceleration, compressing the *tihāī* into the time available; again, this is barely noticeable to the listener.

This second *sātgun* example shows another possibility for generating rhythmic variation.

$M = J = 50 \text{ mm}$

c.30

X	1	2	3	4	2	5	6	7	8
J	J	J	J	J	J	J	J	J	J

3+2+2

0	9	10	11	12	3	13	14	15	16	X
J	J	J	J	J	J	J	J	J	J	J

2+2+3

1 2 3  
(melodic tihāī)

fig 8.16: An extract of improvised development from a performance of a *tīntāl vilambit gat* in *rāg bhairavī* by DC.

<sup>24</sup>Once again, the *lay* ratio is not shown- the semi-quavers are in fact septuplets, and so on.

In this case the *sīdhā* subdivision of 3+2+2 is established in m.1-8, and reversed (to 2+2+3) for m.9-16, which concludes with a simple *tihāī* (the melody of m.14 is repeated for m.15 & 16). This type of permutation (*prastār*) of rhythmic material is not uncommon in this *gharānā*, and is almost certainly influenced by the *tablā*'s solo repertoire, in which *prastār* (particularly this kind of 'reversal' technique) is extremely common.<sup>25</sup>

The examples above illustrate some of the most common rhythmic variation techniques and strategies, as employed in *vilambit gats*, and in three different *lay* ratios. Needless to say the application of such techniques generates an enormous rhythmic diversity and complexity; this complexity is heightened by occasional stroke doubling (as in *dhrupad aṅg toḍā*- see ch 7), by ornamentation, by melismatic 'interludes', or by shifting *lay* ratio in mid-flow. The analytical tools developed in this thesis should however be adequate for most if not all cases.

### Tāns

The highest *lay* ratio employed by DC here is generally *āṭhgun* (8:1), and having reached this level, the remainder of the performance is devoted to *tāns*- fast virtuosic runs. As has already been suggested, the categories '*laykārī*' and '*tān*' are not clearly distinguished; some of the music in the four preceding examples (figs. 8.13-8.16) could be described as '*tāns*', and most of the *laykārī* techniques described above are certainly applied in *āṭhgun tāns* too.

However there is a rough distinction between the earlier '*laykārī*' (extended passages in *pāñc*-, *che*- or *sātgun*, with considerable cross-rhythmic accentuation) and the later '*tāns*' (fast, comparatively regular passages, but unevenly distributed over the cycle).

This first example of *tāns* covers a cycle and a half in *āṭhgun*;

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<sup>25</sup>Cf. 5.2.3.



$M = J = 70 \text{ mm}$

c.75

0	1	10	11	12	3	13	14	15	16
	Y	Y	Y	Y	Y	Y	Y	Y	Y

c.76

X	1	2	3	4	2	5	6	7	8
J	Y	Y	Y	Y	Y	Y	Y	Y	Y

c.77

0	1	10	11	12	3	13	14	15	16	X
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

1 2 3

fig 8.17: An extract of improvised development from a performance of a *tintāl vilambit gat* in *rāg kedārā* by DC.

This example demonstrates the point that the *tāns* are more unevenly distributed over the cycle than the earlier '*laykārī*'. The *tāns* are very fast, but necessarily come in short bursts separated by considerable pauses. Thus in planning the structure of improvisation for the whole cycle, DC is free to express ideas for *tāns* as they come, with the proviso that he must remain sufficiently aware of the *tāl* to improvise a *tihāī* at the end of the cycle. Two *tihāīs* are featured here; the first is a simple pattern (Y) including a rest. The second is a 6-note pattern repeated without pause (*bedam tihāī*), with an additional 2 strokes added to reach *sam*.

The next *tān* example (fig 8.18) includes a regrouping of the eight strokes (into 3+3+2, in m.9), and a *tihāī* which disrupts the steady 8:1 flow.

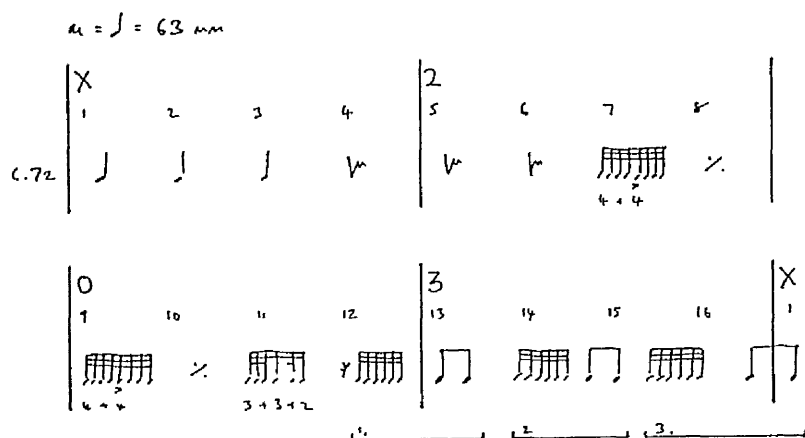


fig 8.18: An extract of improvised development from a performance of a *tīntāl vilambit gat* in *rāg tilak kāmōd* by DC.

The examples above illustrate the range of techniques employed by DC in the improvised development of the *vilambit gat*. These begin with the melismatic *vistār* at low rhythmic densities (see fig 8.11); then the *lay* ratio increases through a number of *laykārī* stages (see figs 8.13-16), in which a variety of rhythmic techniques is employed. In the latter part of the performance, *tāns* are played (usually at 8:1), which are faster, less rhythmically complex and more sparsely distributed over the *tāl* cycle than the earlier phases.

#### 8.3.4: Lay in performance

As with the *dhrupad āṅg*'s *madhya lay gat*, the *vilambit gat* increases both tempo and rhythmic density considerably in the course of a performance. A typical performance may increase in tempo from 40 to 80 MM, although the range can extend down to 32 or up to 92 MM.<sup>26</sup> Average rhythmic densities may be estimated for the *vistār*, and maximum figures for the *laykārī* and *tān* phases.

The number of *bols* per *tīntāl* cycle is typically 24+ in the early stages (the basic *masītkhānī bol* pattern consists of 20 *bols* per cycle, although as we have seen this is usually enhanced in practice), which gives average rhythmic densities of 60+ *bols*/min ( $24 \text{ bols} \times 40\text{MM} \div 16 \text{ mātrās} = 60 \text{ bols/min}$ , using the second formula for average rhythmic densities in 3.2.2). This increases as the rhythm becomes denser and more syllabic, but by

<sup>26</sup>Based on the same sample of 5 of DC's performances.

the time it reaches around 150-160 *bols*/min the rhythm is sufficiently clear for the *lay* ratio to be recognised (ie. *vistār* gives way to *laykāri*).

From this point on, 'maximum rhythmic density' figures may be calculated; figures calculated in this way start at around 250-280 *bols*/min (usually for *pāñc-* or *chegun* sections) and accelerate through *laykāri* and *tān* sections to around 650 *bols*/min. Exceptionally, either *āthgun* (8:1) or *bārahgun* (12:1) *tāns* may reach speeds of 720 *bols*/min and even higher.

Metric tempo remains largely stable through the *vistār* phase, apart from accelerations for *tablā* solos, although there is generally a slight drift upwards. Around the time of the switch to *tāns* the tempo increases dramatically, and one or more further accelerations may be felt later on. The following chart illustrates tempo figures for a typical *vilambit gat* performance by DC, and the one below that (fig 8.20) gives an indication of average and maximum rhythmic density levels for the same performance.

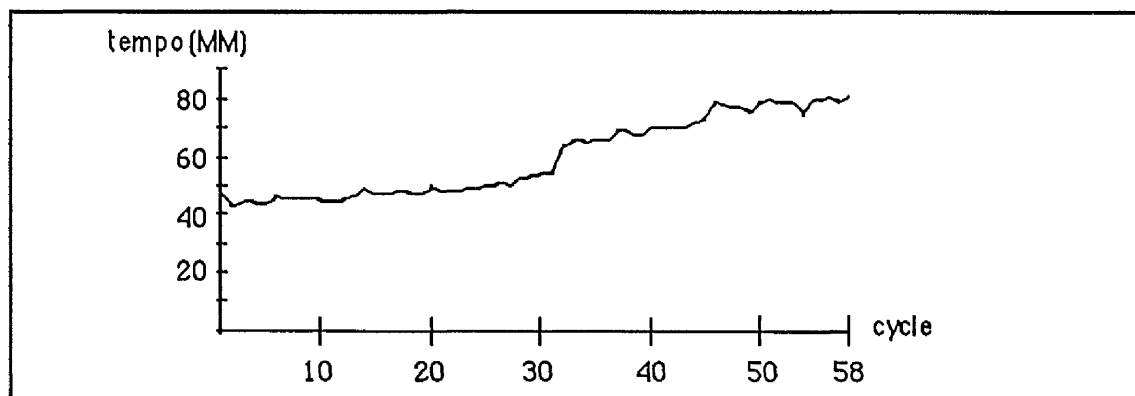


fig 8.19: *Lay* (tempo) chart for a *vilambit gat* performance of *rāg bhaṭiyār* by DC.

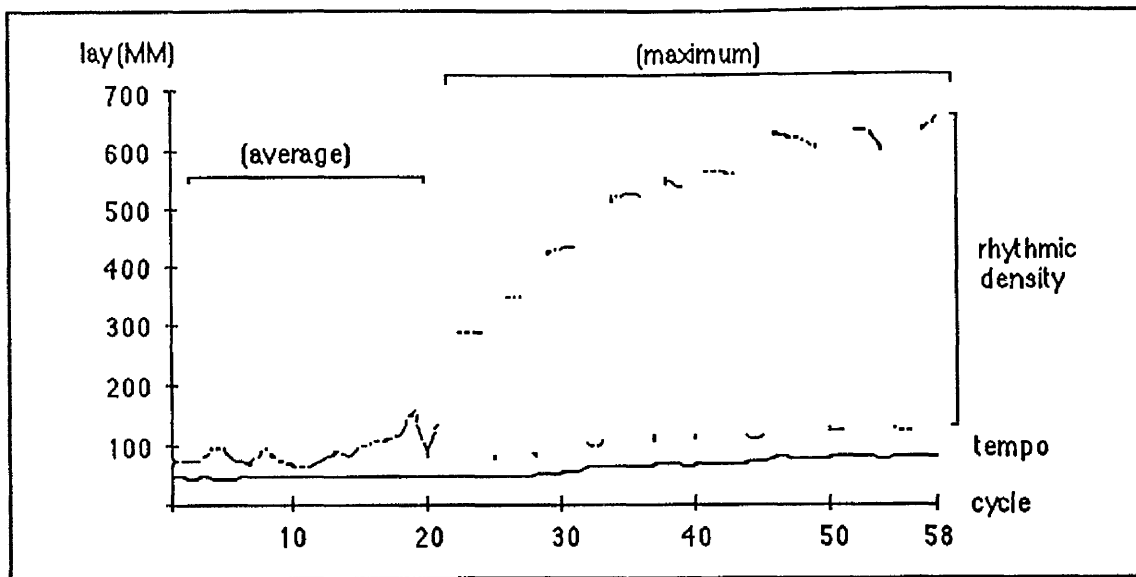


fig 8.20: *Lay* (tempo and rhythmic density) chart for a performance of *rāg bhaṭiyār* by DC.

These findings illustrate the fact that in the early part of a performance, the intention is to keep the tempo stable during *vistār* and *laykāri* passages. Such a tempo, between 40-60MM, is however too low for 8:1 *tāns* to have their maximum effect (which is largely dependent on speed)<sup>27</sup>; therefore around the time of the switch to *tāns* the tempo is deliberately increased, and it continues to increase. Thus the acceleration pattern shows a combination of both paradigms ('only rhythmic density accelerates', and 'tempo accelerates'), which illustrates the hybrid nature of the form, and its combination of features characteristic of both syllabic and melismatic styles.

#### 8.4: Summary

The *vilambit gat* is a popular slow tempo instrumental composition which forms the major part of the '*khyāl aṅg*' of DC's *sitār* repertoire. It is analogous to the *barā khyāl* vocal form in as much as the major *rāg* development takes place within the *nibaddh* section, rather than in an extended *ālāp*. All *vilambit gats* are performed in *tīntāl*, and most are based on the *bol* pattern of the '*masītkhānī gat*', albeit generally in somewhat modified form (extra *bols* are interpolated in the *mukhārā* in performance).

<sup>27</sup>It would of course be possible to increase speed by playing *tāns* at 12:1, retaining a lower tempo. DC does this on occasions, but briefly, and his preferred pattern is to keep to 8:1, increasing the tempo in the latter part of the performance.

Development is episodic, and punctuated by *tablā* solos- which are accompanied by the *gat sthāyī* played on the *sītār* as a refrain. Cadential patterns, as exemplified by the *mukhṛā* and the *tihāī*, are prominent- most cycles and all episodes end in some form of cadence.

The early part of each performance, immediately following the *gat* itself, is termed *vistār* (or *baṛhat*). In *vistār*, *rāg* development is primary, and rhythm may appear 'free' through a combination of melisma, syncopation and rubato. On a deep level, most *vistār* is in fact rhythmically structured: the structure is based on a combination of *tāl* structure and *gat bol* pattern, and may be reconstructed from the *bol* pattern despite the considerable rhythmic distortion (as in fig 8.12).

It should be noted that, despite the influence of *khyāl gāyākī* the *sītār*'s melisma, as produced by *mīṇḍ*, is distinctly limited compared to that of which the voice is capable. Thus it is usually possible in this context to conceive of the melisma as ornamental, either preceding or following a 'main note', and to regard the complex of attack-main note-sustain as represented by a single *bol*<sup>28</sup> (which is not always the case in *khyāl gāyākī*).

Rhythmic density increases throughout the *vistār*, hinting at *tigun* and *caugun* (3:1 and 4:1), but usually not crystallising out until *pāñcgun* or *chegun* (5:1 or 6:1). This level increases by stages (typically (5:1)-(6:1)-(7:1)-(8:1), levels which are known loosely as 'laykārīs', and referred to in this work as 'lay ratios'.

Once a level of 8:1 is reached, the performance moves on to *tāns*- fast, rhythmically even but often unevenly distributed over the cycle. Thus the performance may be roughly described in terms of the formal categories *gat-vistār-laykārī-tān*, although the distinctions between the last three of these categories are not always clear, as illustrated below in a formal scheme of a typical *vilambit gat* performance.

<sup>28</sup>Widdess [1993] notes the distinction current in the Dagar *dhrupad* tradition, in which the note's onset or attack '*āghāt*' is distinguished from its sustain or resonance "*anurāṇa*"; he also notes a possible derivation of this concept from the performance style of the *bin*. I have not come across these terms in the Maihar tradition, but the concept that (at least in the *dhrupad āṅg*, and especially in *ālāp*) a main note may be connected with others through pitch inflection in the attack and/or sustain, and that the entire complex of attack-main note-sustain may be represented by a single *bol*, is certainly current. Much melisma must therefore be considered in this 'syllabic' context, although this model can break down in imitations of *khyāl* or *thumrī gāyākī*.

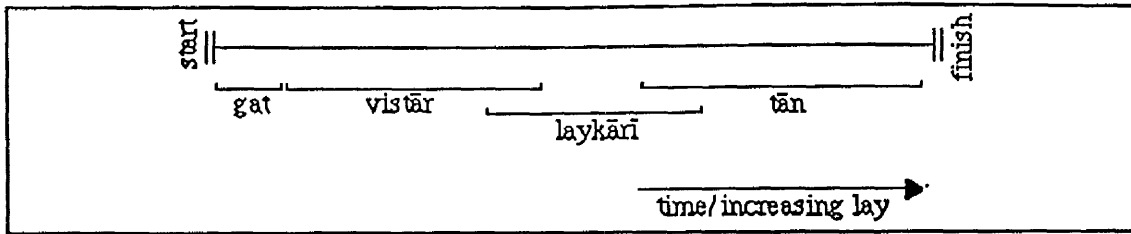


fig 8.21: An illustration of the principal performance stages in a typical *vilambit gat* performance by DC.

Tempi range from 32-92 MM, typically 40-80 MM. Average rhythmic densities in *vistār* increase from around 60 *bols/min*. Maximum rhythmic densities, from the point at which they may begin to be calculated, range from between 150-250 *bols/min* to 650 *bols/min* (occasionally as high as 720 *bols/min*). Acceleration patterns suggest a hybrid form, combining both basic paradigms (ie. at first only rhythmic density increases, later tempo too is deliberately increased).

The *vilambit gat* clearly shows traces of its historical development, in its rhythmic structure. The modern *vilambit gat* was created by slowing down the medium tempo *masītkhānī gat*, eliminating the *toḍā* and *jhālā* and replacing them with *vistār* and *tāns* in imitation of *baṛā khyāl* practice. The *vilambit gat*, as performed by DC, clearly reflects the intended *khyāl* influence, but also retains much of its syllabic rhythmic organisation- and in some ways is closer to the *sītār's dhrupad āṅg* forms than it is to *khyāl gāyākī*.

Perhaps the most remarkable fact about the *vilambit gat* is not the changes brought about in the last 50-100 years, but the fact that the *masītkhānī gat* should have proved so adaptable in surviving fundamental changes in performance practice. The *gat's* fixed *bol* pattern replaces the function performed by the text in vocal music, providing a recognisable and rhythmically structured theme in combination with the *rāg's* melodic contour. This particular *bol* pattern has been remarkably successful, due to a combination of factors.

It should be noted that not only does *vistār* represent *khyāl* influence, so too do the *tāns*. The earlier practice in *masītkhānī gats* was to increase the *bol* density at a faster rate than the melodic movement (ie. play more than one *bol* for each note) when increasing rhythmic density. The fast left hand movement necessary to imitate the *khyāl's tāns* is a recent technical development, just as much as the extended range of *mīṇḍ* in *vistār*.<sup>29</sup>

<sup>29</sup>See Dick [1984:399] and Dhar [1989:165].

To set against these *khyāl* features however, the wide variety of rhythmic variation techniques employed would be very unusual for *khyāl*, and the ubiquitous use of *tihāīs* is not a common *khyāl* feature. The performance practice of the *vilambit gat* in this *gharānā* has been distilled from older instrumental styles, *khyāl* and *dhrupad gāyakīs*, the percussion repertoire, *kathak* dance and South Indian music<sup>30</sup>: all the elements come from Indian classical music, but the particular mix is unique to Maihar instrumental style. The deliberate attempt to maximise *khyāl* features in *vilambit gat* performance- made by Ustad Allauddin Khan and successive generations of instrumentalists as part of a wider attempt to expand the repertoire of instrumental music- has not been without effect; the degree to which *khyāl* influence distinguishes this genre will be discussed further in chapter 9.

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<sup>30</sup>The *bol* pattern comes from the older *sitār* styles; *vistār* and *tāns* from *khyāl*, *laykārī* from a combination of the rest.

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## Chapter 9: A comparative study of madhya lay- and vilambit gats in the sitār repertoire of Deepak Choudhury

### 9.1: Introduction to the comparative study

Section II of this thesis was introduced as a case study, illustrating the concepts of rhythmic organisation and techniques of rhythmic analysis developed in Section I. The intention was to look at two major compositional forms (the *madhya lay-* and *vilambit gats*) in the repertoire of the sitārīst Deepak Choudhury. Chapter 6 outlined the principal elements in DC's repertoire, and the place of these two *gat* types in that context. The two subsequent chapters described rhythmic analyses of these two *gats*, effectively characterising them in rhythmic terms. The purpose of the present chapter therefore, is to compare these findings, and to consider what the analysis can tell us both about the *gats* (including their relationships with analogous vocal forms), and about the analytical techniques employed.

Two important questions were introduced about these *gats*; firstly, to what extent should they be considered separate genres, and secondly to what extent the distinctions between them are dependent on their identification with analogous vocal forms (*dhrupad* and *barā khyāl*). These questions have been approached by means of rhythmic analyses of each of these forms: in particular the analysis looked at *tāl* structures; *gat* structures; techniques and processes employed in the development phases (including *laykārī* techniques); accompaniment styles; and *lay* in performance (including measurements of tempo and rhythmic density).

This objective analysis was in fact directed by culturally determined considerations. The fields of enquiry (*tāl*, *lay*, *laykārī*, *gat*, *bol* patterns etc) are largely determined by categories specifically relevant to the music culture, as evidenced by its oral and written traditions (in fact, the very idea of correlating instrumental and vocal genres was suggested by the comments of DC himself). Indeed there is little point in attempting to remove rhythmic analysis from its musical context. The primary importance of rhythmic analysis is that it allows us to understand better how music is conceived, organised and performed- the context of rhythm is the context of music as a whole.

A second reason for undertaking rhythmic analysis is that it can clarify points of comparison between different pieces of music, and ultimately provide evidence in support

of historical studies of musical development. This present study too has a historical dimension: the search for correlations between instrumental and vocal forms tells us something about the historical development of instrumental music, since these *gat* forms are known- to the oral tradition at least- to have been developed by grafting vocal elements onto idiomatic instrumental forms.

There are certain common assumptions on the organisation of music which unite the two *gat* forms under consideration, and these assumptions provide the structure for the comparison which follows (as outlined in chapter 4). For instance, all *nibaddh* music is organised by *tāl*, which sets up an explicit metric structure. This structure does not vary within each *gat* performance, although its realisation in sound may (and so too may its tempo). Moreover, everything played by the *sitār*, except the *gat* itself, may be regarded as melodic and/or rhythmic development of that *gat*. This development includes a variety of (generally loosely defined) formal and technical elements (*toḍā*, *vistār*, *laykāri*, *tihāi*, *tān* etc), and usually follows the following principles;

- *Lay* (tempo and rhythmic density) tends to increase, and as it does so rhythm becomes less complex.
- Development is organised into 'episodes', which are separated by *tablā* solos.
- Each 'episode' (ie. the time between *tablā* solos) may be regarded as a sequence of 'sub-episodes' of one or more cycles each.
- Most 'sub-episodes' and all 'episodes' of improvised development are concluded with cadential formulae, most commonly *tihāis* and/or restatements of the *gat*'s *mukhṛā*.

Thus the comparative study which follows may be organised in the same way as the single studies of chapters 7 & 8 (ie. in four sections, *tāl-gat-development-lay*). It will include consideration and comparison of *tāl* structure and *gat* structure (and their relationship); *lay*; the organisation of improvised development; types of cadential pattern; development techniques employed and *laykāri*.

The type of distinctions which might have been expected were set out in 6.3. The following section, 9.2, consists of an issue by issue comparison of rhythmic features of DC's *madhya lay*- and *vilambit gats*, based on the findings of chapters 7 & 8. More general conclusions and an appraisal of this study in context follows in 9.3.

## 9.2: A detailed comparison of the madhya lay- and vilambit gats in the repertoire of Deepak Choudhury

### 9.2.1: Tāls

A comparison of the *tāls* used in each of these two *gat* forms, reveals clear distinctions in structure and variety. DC's *dhrupad aṅg gats* may be performed in any of six *tāls*, and there appears to be no reason in principle why yet more could not be added to this list. All these *tāls* have something in common; each includes some element of asymmetry and/or irregularity,<sup>1</sup> and in each case the structures suggested by the clap pattern and *thekā* are considered identical.<sup>2</sup> In contrast all *vilambit (khyāl aṅg) gats* are set in *vilambit tīntāl*. *Tīntāl* is symmetrical and regular, but the structures suggested by clap pattern and *thekā* overlap slightly (see 2.2.3, 2.4.1). Thus there is a clear distinction between *tāls* employed in these two genres, in at least three respects;

	madhya lay gat (dhrupad aṅg)	vilambit gat (khyāl aṅg)
<i>tāls</i>	<i>jhaptāl, rūpak tāl, matta tāl, cārtāl kī savārī, pañcam savārī tāl, dhamār tāl</i>	<i>tīntāl</i>
structures	'additive'; irregular, mostly asymmetrical [2323, 322, 423, 443, 4443, 554]	'divisive'; regular, symmetrical [4444]
<i>thekā</i> vs. clap pattern	coincide exactly	overlap
tempo ( <i>lay</i> )	medium-fast (84-179MM)	slow-medium (32-92MM)

fig 9.1: A comparison of the features of the *tāls* used in DC's *madhya lay-* and *vilambit gats*.

The evidence of the *tāls* clearly suggests that these *gats* are indeed distinct genres. There is more doubt over the second question (are the distinctions based on those between *dhrupad* and *khyāl* vocal forms?). If a similar chart is constructed for *dhrupad* and *barā khyāl*, we can see that the distinctions do not correlate exactly.

<sup>1</sup>They are all what Sachs would have called 'additive' structures (see 1.2.2).

<sup>2</sup>Considered by the artist that is; despite this observer's reservations in respect of *dhamār tāl* (cf 2.2.3, 2.3.1).

	<b>dhrupad (medium tempo)</b>	<b>baṛā khyāl</b>
<i>tāls</i>	<i>cautāl, jhaptāl</i> <sup>3</sup>	<i>jhūmrā, ektāl, tilvādā tāl (tīntāl)</i> <sup>4</sup>
structures	'additive'; irregular [4422, 2323], <i>cautāl</i> asymmetrical	various [3434, 4422, 4444]
<i>thekā</i> vs. clap pattern	coincide	<i>jhūmrā</i> coincides, others not
tempo ( <i>lay</i> )	medium (39-125MM)	slow (11-60)

fig 9.2: A comparison of the features of the main *tāls* used in *dhrupad* and *baṛā khyāl* performance

The comparison between tables 9.1 & 9.2 suggests that the greater variety of *tāls* employed in the *dhrupad āṅg* is not derived from a similar distinction in the vocal forms; in the other cases (the regularity or similarity, the coincidence of *thekā* and clap pattern), the situation of the *khyāl tāls* is too complicated for one to make comparable generalisations.

### 9.2.2: Gats

7.3.2 outlined three major types of *madhya lay* (*dhrupad āṅg*) *gat*, namely;

- simple (*tāl*-division based) *gats*, based on simple *bol* patterns generated by the *tāl* structure, which may be varied by either stroke doubling, syncopation within the *vibhāg* or use of hemiola (in 3-*mātrā vibhāgs*).

- syncopated *gats*; as above, but including syncopations across *vibhāg* boundaries.

- *mukhrā gats*; a more developed form, in which a 2 1/2 *mātrā* pattern ('diri, da-ra') has become fixed as a *mukhrā*.

8.3.2 showed how almost all DC's *vilambit gats* are based on the 'masītkhānī' *bol* pattern, usually with some modifications. Illustrations of all these *gat* types are given below, to facilitate comparison;

<sup>3</sup>Other *dhrupad tāls* such as *sūltāl* and *tivrā tāl* are used at faster tempi; *matta tāl*, *brahma tāl* and others are used rarely, and generally in *pakhāvaj* solos only.

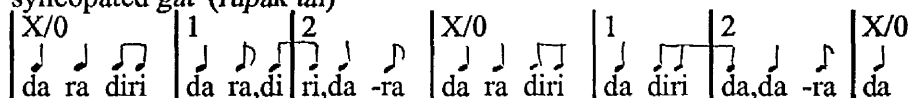
<sup>4</sup>Other *tāls* such as *jhaptāl* and *rūpak tāl* are occasionally used for *vilambit khyāl*.

## Madhya lay gats

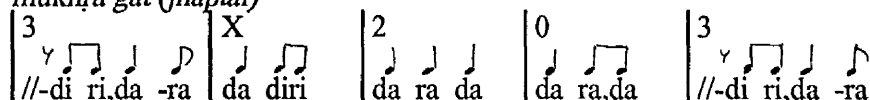
### simple gat (jhaptāl)



### syncopated gat (rūpak tāl)

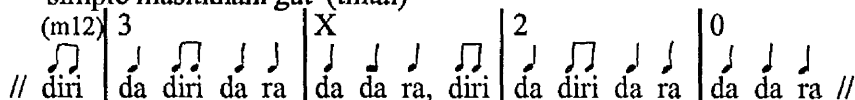


### mukhrā gat (jhaptāl)



## Vilambit gats

### simple masītkhānī gat (tīntāl)



### modified masītkhānī gat (tīntāl)

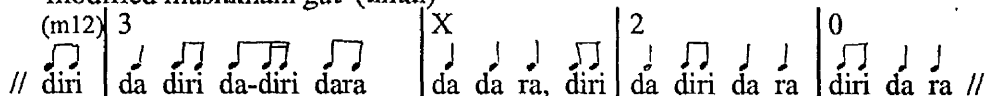


fig 9.3: An illustration of the most common types of *madhya lay*- and *vilambit gat* structures employed by DC.

Once again there is a clear distinction between the genres, and one of the differences between them demonstrated here is the greater rhythmic variety in the structure of '*dhrupad āṅg*' gats. The comparison, like that between *tāls*, doesn't shed much light on the relationship with vocal genres- although most *khyāls*, like *vilambit gats*, feature *mukhrās*, while this is an optional feature of *dhrupads*. What this figure does suggest, is that we can begin to trace the development in *gat* types, at least as far back as the point at which the modern *dhrupad*- and *khyāl āṅgs* became established. It may be an over-simplification to suggest that in the early stages all *vilambit tīntāl gats* followed the simple *masītkhānī* pattern, and that all non-*tīntāl madhya lay gats* had simple *tāl*-based structures; however these types do seem to have been the prototypes of the *gats* currently performed in Maihar style.

It seems logical to suppose that the modifications in *masītkhānī* patterns (ie. the adding of extra strokes and the use of syncopation and rubato) are by-products of the slowing down of the *masītkhānī gat*'s performance tempo. If, as DC has confirmed, the

first five *mātrās* are intended to function as an anacrusis, then this preparatory function would be assisted by increasing the *bol* density and rubato or syncopation (without these modifications, this type of *mukhrā* creates little rhythmic tension leading up to *sam*, at these low tempi).

The fact that the five *mātrās* immediately before the *sam* are modified considerably more than the three *mātrās* after *sam*, supports this hypothesis (since tension is released on *sam*'s 'downbeat', the simple rhythm of these three *mātrās* in the original pattern is sufficient). It seems therefore that the development of the *masītkhānī gat* has been largely determined by the decrease in tempo, which has created a tendency to vary parts of the basic *bol* pattern (particularly the *mukhrā*). This is a further illustration of the interdependence of tempo and structure. A common type of modification is illustrated below, in which the rhythmic pattern of the original *mukhrā* is 'quoted' at a higher *lay* ratio within the modified pattern (♩ ♩ ♩ ♩ becomes ♩ ♩ ♩).<sup>5</sup>

fig 9.4: An illustration of modified *bol* patterns in the *mukhrā* of slow tempo *masītkhānī gats*.

In the case of the *dhrupad āṅ gats*, the *mukhrā* type is definitely a very recent innovation, having been invented by DC himself. It seems likely that the early non-*tīntāl gats* were relatively simple, *tāl*-structure based compositions: it is not difficult to imagine a process of gradual development of such forms, introducing more and more complex *bol*

<sup>5</sup>There is a parallel here with the progressive diminution of the *bol* 'titakitagadigana', used as a cadential pattern in *pakhāvaj* accompaniment- see fig 2.4 (this observation was suggested to me by Widdess).

patterns, and greater syncopation.<sup>6</sup> The new *mukhrā* type *gat* clearly demonstrates the influence of the *vilambit* (*masītkhānī*) *gat*, and is an example of cross-fertilisation between these genres. In all other respects, the *mukhrā*-type *madhya lay gat* is a close relative of the non-*mukhrā*, *tāl*-based types.

While these hypotheses will remain just that until a more detailed historical survey can be undertaken, this study suggests that it may be possible to trace the development of instrumental *gat* forms, through a study of *bol* patterns. What it tells us about the particular forms under consideration here is that they are based on idiomatic instrumental forms which have developed according to the logic of *tāl*, *lay* and performance practice.<sup>7</sup> Influence of vocal forms on *gat* structures, where it occurs, does so indirectly- there is no evidence that these types have been composed in imitation of vocal *bandishes*.

### 9.2.3: Development in performance

It was suggested above (9.1) that there are considerable similarities in approach between these two *gat* types- in particular we noted the principle of playing short fixed compositions (*gats*) followed by extended improvised development; the episodic organisation of that development; and to the tendency to accelerate. It was also pointed out that in both genres, development employed a combination of formal techniques, but that since these techniques are not strictly separated in performance, it is difficult to organise a survey of these forms on this basis.

In the earlier analyses (chs. 7 & 8), summaries were set out in the ways considered most appropriate to the respective genres. Thus in chapter 7 the discussion was divided into three sections, covering in turn low rhythmic densities, high rhythmic densities, and special *tihāī* varieties. The first of these covered *toḍās*, *vistār*, *laykārī* and simple *tāns*, the second fast *tāns*, and the third *tihāī* varieties such as *cakkardārs*. Quite simply, it would be futile to try to break down the categories any further (to look at *toḍā* as a separate section, and so on), since these techniques are not kept separate in performance; the only meaningful

<sup>6</sup>In this case, and that of the *vilambit gats* cited above, a more thorough historical survey would be required. These hypotheses seem likely at this stage, however.

<sup>7</sup>How the *masītkhānī gat* originally achieved its form, prior to this modification, is another question. Vocal influence may have been a factor, but in any case it apparently predates the modern '*khyāl ang*' concept.

distinction (other than the special *tihāīs*) was of rhythmic density, between fast *tāns* on the one hand and everything else on the other (and even that distinction is not always clear).

The discussion of the *vilambit gat* fell into three main categories- *vistār* at low rhythmic density, *tāns* at high rhythmic density, and *laykāri* linking the two and overlapping at both ends. It was also necessary to consider cadential patterns as a separate topic, since there is in this genre an overlapping of function between the *mukhārā* and the *tihāī*, which was worth noting (see 8.3.3). These conceptual divisions were logical, and presented the most practical way of introducing the diversity of techniques employed in the music- it would however be unwise to read too much into the number of sections into which this analysis is divided.

The first and most general point to make is that, since both forms share some basic assumptions on the organisation of performance, this leads to a certain degree of convergence between the performance practice of the genres. These assumptions include the fundamental “*gat* + development” idea, the episodic arrangement of the development, the increasing lay and a shared accompaniment style (the *tablā* plays elaborated *thekā* in both cases, except for a brief passage of *sāth saṅgat* at the end of the *madhya lay gat*). In both genres too, the latter part of the performance consists of fast *tāns*. These factors are illustrated in the following figure, which compares formal schemes of typical performances of each of the two genres;

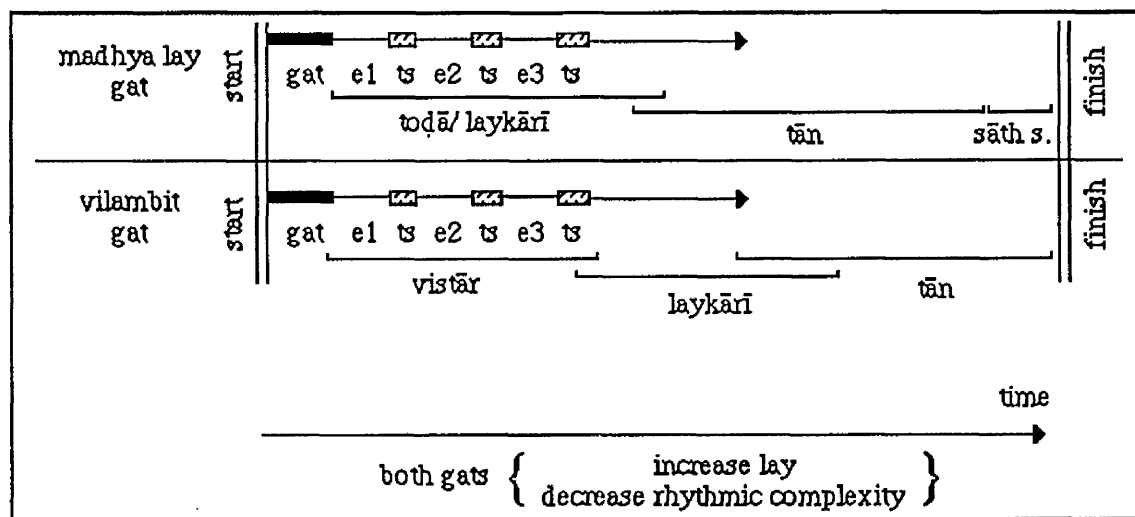


fig 9.5: A comparison of formal schemes of typical *madhya lay*- and *vilambit gats*, as performed by DC.



If the two genres are most similar in the *tān* sections at the end of the performances, they are most dissimilar at the beginning of the development phase. Roughly speaking, in the *madhya lay gat* the early improvisation is *tāl*-based; *bol* patterns are generated by means of simple divisions of the *tāl* cycle. Some melisma may be incorporated in the early stages, and as the rhythmic density increases the emphasis changes from *toḍā* (*bol* combinations) to *laykāṛī* and ultimately to *tāns*. The development of the *madhya lay gat* is essentially syllabic and *tāl* based.

In the *vilambit gat*, DC makes use of the long cycles and the slow tempo to introduce as much melisma as possible, in as free a rhythmic style as possible. Improvisation is still largely *tāl*-based (and syllabic) at a deep level- the *vistār* is based on *bol* patterns ultimately derived from the *tāl*, albeit modified by rubato and syncopation. The emphasis is on *rāg*-development at this stage, and only shifts to rhythmic variation as the rhythm crystallises at higher *lay*, when techniques of *laykāṛī* as such come into play.

The difference between the *dhrupad āṅg* 'toḍā' and the *khyāl āṅg* 'vistār' are illustrated by fig 9.6 (overleaf). These two examples are scaled to real time, to facilitate comparison of rhythmic density and style. The difference is clearer in the area of rhythmic density- the *toḍā* is much denser than the *vistār*. In terms of rhythmic style, there are hardly more instances of melisma in the 'vistār', although those that are played are slower and therefore longer- those heard in the *toḍā* may usually be regarded as ornamental.

### Summary

The answer to both basic research questions must be equivocal. There are clearly fundamental differences between the development of these *gats*, but there are also areas of considerable convergence. As for the influence of vocal genres, the parallel between the more syllabic style and higher *lay* of the *dhrupad āṅg gats* and the text-based, medium tempo improvisation of *dhrupad* on the one hand, and between the more melismatic style and lower *lay* of the *khyāl āṅg* (*vilambit*) *gat* and the melismatic, rhythmically free use of text and slow tempo of the *barā khyāl* on the other, is obvious.

This does not mean however that the *madhya lay gat* "sounds like" *dhrupad*, or the *vilambit gat* like *barā khyāl*. There are considerable differences, partly to do with the technical limitations on the *sītār* in imitating the voice (eg. its insufficient sustain limits



melisma), which make it impossible for the *sitār* to effectively copy vocal styles. Therefore while it is fair to say that there are clear differences between the development procedures of these two *gat* types, and that these differences are largely determined by those between the analogous *gāyakīs*, it would be unwise to go so far as to say that the instrumental genres imitate the vocal, or indeed that they particularly sound like them.

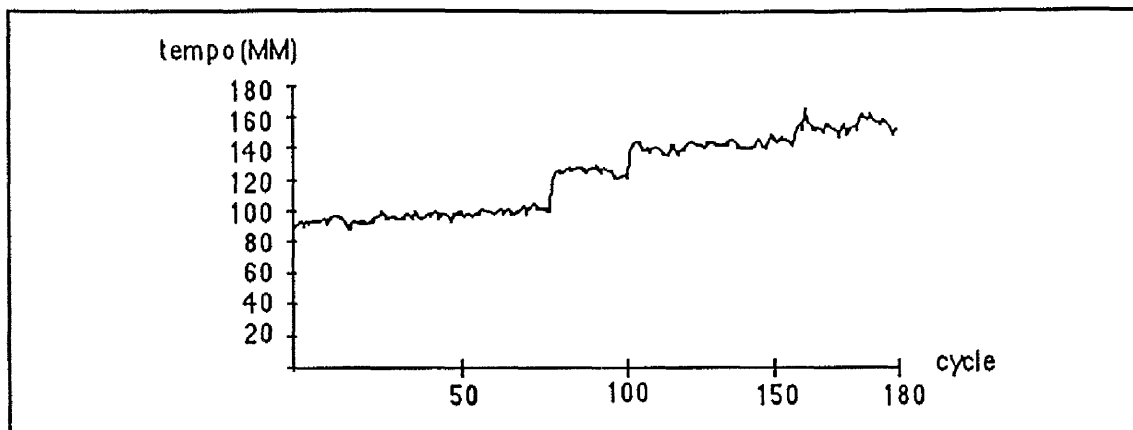
#### 9.2.4: Lay in performance

In comparing these two genres, we may introduce evidence of several different aspects of *lay*- tempo, rhythmic density and the *lay* ratio. As a rough guide, the tempo of the *madhya lay gat* is approximately double that of the *vilambit gat*. In both genres the tempo accelerates considerably, commonly ending at about double the starting tempo. The figure below compares tempo measurements for each genre.

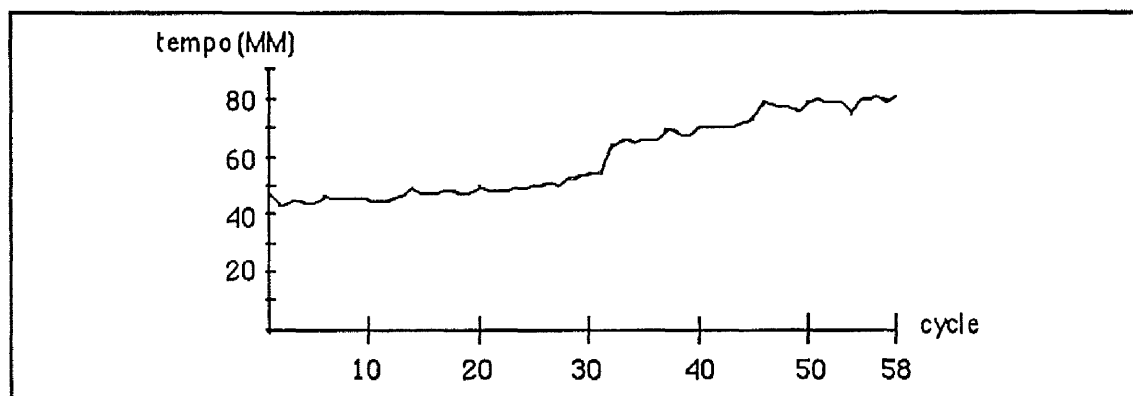
	madhya lay gat	vilambit gat
range (MM)	84-179	32-92
actual (MM)	84-179	41-73
	85-163	41-78
	92-174	43-82
	140-163	32-74
	88-161	39-92
	85-159	

fig 9.7: Tempo ranges for DC's *madhya lay*- and *vilambit gats*, based on a sample of eleven performances.

The tempo charts below show how similar the acceleration patterns can<sup>be</sup> in these genres. In both cases the tempo in the early stages is fairly stable, then shows a dramatic increase (usually around the time fast *tāns* are introduced), and then one or more further increases.



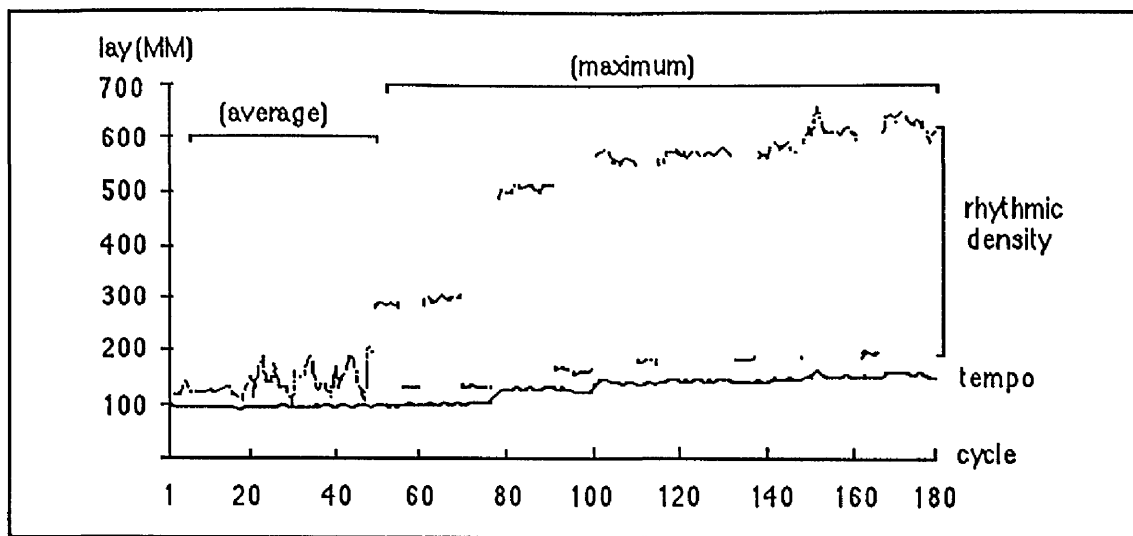
Lay (tempo) chart from a *madhya lay gat* performance (*rāg pūriyā, jhaptāl*, cf. fig 7.29).



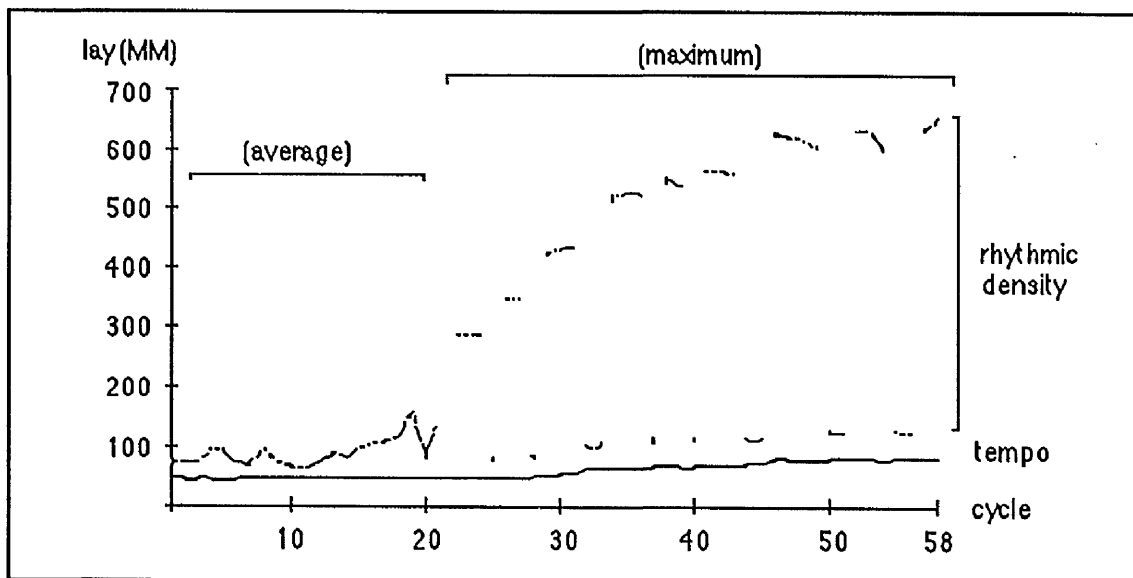
Lay (tempo) chart from a *vilambit gat* performance (*rāg bhaṭiyār*, cf. fig 8.19).

fig 9.8: A comparison of two *lay* (tempo) charts, both from performances by DC.

Comparison of rhythmic density figures supports the findings of the previous section (9.2.3). The average rhythmic density figures from the early stages of development of *madhya lay gats* are approximately double those of the *vilambit gats*. Maximum rhythmic densities, from the *tān* sections, are on the other hand almost identical (c. 650 *bols/min*);



*Lay* (tempo and rhythmic density) chart from a *madhya lay gat* performance (*rāg pūriyā*, *jhaptāl*, cf. fig 7.30).



*Lay* (tempo and rhythmic density) chart from a *vilambit gat* performance (*rāg bhaṭiyār*, cf. fig 8.20).

fig 9.9: A comparison of two *lay* (tempo and rhythmic density) charts, both from performances by DC.

The comparison of *lay* measurements therefore broadly supports the conclusions of the earlier sections, especially that on development in performance (9.2.3). The overall formal schemes for performance of the two genres are closely related, as are the later *tān* sections, but the *gats* themselves and the early development phases are quite distinct not only in concept and techniques, but also in *lay*.

The *lay* measurements provide empirical confirmation of the earlier conclusions. There are clear distinctions between these two genres, which are at least partly determined

by their relationships with analogous vocal forms. However, the *gats* are by no means imitations of the vocal genres, and common assumptions on the organisation and performance of the music, together with a cross-influence of techniques, causes a degree of convergence between the *gats*.

### 9.3: Summary and conclusions

The aim of this final section will be to summarise the findings of the case study which constitutes Section II of this thesis. This will cover the following issues in the first instance;

- To what extent may these two *gat* forms be considered separate genres?
- Are the distinctions between them based on, or similar to, differences between the

*baṛā khyāl* and *dhrupad* vocal forms?

This analysis will be based on a comparison of rhythmic features between the two *gat* forms.

## 9.3.1: Comparison of rhythmic features

	madhya lay gat (dhrupad āṅg)	vilambit gat (khyāl āṅg)
performance context	follows full <i>ālāp-jor</i>	follows <i>aochār</i> (brief <i>ālāp</i> ) precedes <i>drut gat</i>
vocal influence	said to be analogous to <i>dhrupad</i>	said to be analogous to <i>barā khyāl</i>
<i>tāls</i>	<i>jhaptāl</i> (2323), <i>rūpak tāl</i> (322), <i>cārtāl kī savārī</i> (443), <i>pañcam savārī tāl</i> (4443), <i>matta tāl</i> (423), <i>dhamār tāl</i> (554)	<i>tīntāl</i> (4444)
<i>lay</i> (tempo)	85-180 MM	32-92 MM
<i>lay</i> (ave. rhythmic density) <sup>8</sup>	115-188 MM	72-165 MM
<i>lay</i> (max. rhythmic density)	290-646 MM	291-654 MM
<i>lay</i> (acceleration)	starts stable, stepped acceleration around change to <i>tān</i> phase and one or more further increases	(as <i>madhya lay gat</i> )
<i>lay</i> ratios used	2:1, 3:1, 4:1 (and 4:3, 5:2, 7:2, 6:1, 8:1 occasionally)	3:1, 4:1, 5:1, 6:1, 7:1, 8:1 (and 12:1 occasionally)
<i>gat</i> structure	most <i>tāl</i> -based, some syncopated and some with 2 1/2 <i>mātrā mukhrā</i>	most modified <i>masītkhānī gats</i>
formal scheme of performance	1. <i>Gat (sthāyī)</i> statement 2. Development: episodic, with <i>tablā</i> solos accompanied by <i>sītār gat</i> . Starts with syllabic rhythmic development ( <i>toḍā, laykārī</i> ); increases <i>lay</i> while decreasing rhythmic complexity. Latter part <i>tāns</i> in <i>caugun</i> (4:1). Ends with episode of <i>sāth saṅgat</i> .	1. <i>Gat (sthāyī)</i> statement 2. Development: episodic, with <i>tablā</i> solos accompanied by <i>sītār gat</i> . Starts with <i>rāg</i> development ( <i>vistār</i> ), increases <i>lay</i> through stages ( <i>laykārī</i> ). Latter part <i>tāns</i> in <i>āṭhgun</i> (8:1). No <i>sāth saṅgat</i> .

fig 9.10: A summary of the rhythmic features of the *madhya lay*- and *vilambit gats* in the repertoire of DC.<sup>8</sup> Average and maximum rhythmic densities are taken from those performances illustrated in fig 9.9 above.

This figure illustrates the principal results of the rhythmic profiles of DC's *vilambit* and *madhya lay gats*. It demonstrates the fact that Indian musical forms may be characterised clearly and objectively, using only rhythmic parameters. This type of characterisation is invaluable in comparative studies, such as the present work. In this case, there are notable areas of both similarity and difference between the *gat* forms. Firstly, some of the differences will be listed;

- The performance context; this is related to the question of analogies with vocal forms.
- The *tāls*; both the greater variety of *tāls* used for the *madhya lay gat*, and differing structural features.
- The *gat* structures; *vilambit gats* are based on the *masītkhānī gat* with its 5-*mātrā mukhrā*. *Madhya lay gats* are based in principle on the structure of the *tāl* itself, although there has been some cross-influence by the *vilambit gat* in the adoption of a 2 1/2 *mātrā mukhrā* in some cases.
- The development (in early stages in particular); that of the *madhya lay gat* is faster, and more obviously syllabic in style- that of the *vilambit gat* slower and more melismatic.
- The *lay*; the tempo of the *madhya lay gat* is approximately double that of the *vilambit gat*, as is the rhythmic density in the early part of the performance.

These differences are clearly substantial enough for us to be able to describe these two *gat* types as separate genres. However, we should also take into account considerable areas of convergence, as follows;

- The formal scheme; both forms share the “*gat* + development” principle. The development is in both cases episodic, punctuated by *tablā* solos. In both cases *tihāīs* are common cadential patterns.
- *Laykāri*; in both genres *lay* is increased in stepwise fashion (influenced somewhat by South Indian practice). The basic levels for *madhya lay gats* (2-3-4:1) are half those for *vilambit gats* (4-(5)-6-(7)-8:1), which compensates for the higher tempo, producing similar rhythmic densities in the latter stages of performances.



- *Tāns*; in both cases the latter part of the development<sup>9</sup> consists of *tāns* at very similar rhythmic densities.

Having summarised these results, it remains to put them into context, and consider their implications.

### 9.3.2: The relationship between instrumental and vocal forms

The case study looked at the rhythmic features of two instrumental forms in the light of their musical and historical context, to see what lessons could be learned thereby. One of the principal questions asked was: to what extent are the distinctions between these two genres based on similar distinctions between analogous vocal forms? We are now in a position to attempt an answer to that question.

A number of indicators do add up to symptomatic evidence of the influence of the *dhrupad* and *khyāl gāyakīs* (and specifically the influence of presumed differences between them). The main evidence is the difference in *lay* (metric tempo), and the presence of *vistār* in the *vilambit gat* and its almost complete absence from the more syllabic *madhya lay gat* (and the rhythmic density measurements which support these conclusions). The use of *sāth saṅgat* in the accompaniment of the *madhya lay gat*, may also be cited.

Other factors need to be considered however: thus a number of factors point to either a common conceptual basis of the music, or to cross-influence between the genres. Moreover, not all the differences between these two *gat* forms correlate with similar distinctions between vocal forms (for example the difference in variety and structure of the *tāls*); several factors common to both genres are independent of either *dhrupad* or *khyāl* (eg. the use of *tihāīs* and of South Indian influenced *laykāri* techniques); and elements of both *gāyakīs* are either not transferred at all, or are transferred in what is arguably a token fashion (eg. the brief *sāth saṅgat* in *madhya lay gats*). As for cross- influence, the adoption of *mukhrās*, and the use of *khyāl* derived *tāns*, in the *madhya lay gats* are the most obvious examples.

A pattern begins to emerge, suggesting a complex web of forces influencing the past and present development of these *gats*, forces which often contradict or compete with

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<sup>9</sup>46-65% of *madhya lay*, 27-58% of *vilambit gats*, in the examples cited here.

each other. It is clear that the changes introduced by Allauddin Khan (and others) have been an unequivocal success in expanding and diversifying the instrumental repertoire, justifying his adoption of vocal models. However, if it was intended literally to create imitations of vocal forms (and it is not clear that this was in fact the intention), this has certainly not occurred. Factors such as the technical limitations on both sustain and melisma possible on the *sītār* make such imitations impossible.

Moreover there is an inevitable tendency for creative musicians to introduce new elements to the music (such as may not have been foreseen by Allauddin Khan and his contemporaries); one logical route for innovation is the transfer of techniques and formal elements from one genre to another. A musician such as DC is conscious of the need to retain distinctions between genres, and to retain elements which suggest vocal analogies. He is also, nonetheless, tempted to cross-fertilise the various genres, and to develop his own style, responding to the restrictions of *tāl* and *lay* and to his own personal interpretation of musical structure and process.

The study of rhythmic features led to a suggestion of a variety of forces acting on the development of these genres, of which the relationships with vocal forms, although important, were not uniquely so. The figure below summarises the most important factors influencing these genres, and the rhythmic evidence suggesting the importance of these forces.



- Recognition of a number of forces acting on these genres and influencing their development; suggestion of vocal analogies, retention of separation between genres, sources of common influence, cross-fertilisation and autonomous development (see fig 9.11 above).

- Indications both of the importance of the relationship between vocal and instrumental forms, and of its limitations.

By combining a background knowledge of Hindustānī music (and of this *gharānā* in particular), and the views expressed by the performer concerned, with a detailed and objective rhythmic analysis, a model has been built up not only of the music's rhythmic and formal structure, but also of its musical and historical context, and even of the ways in which the rhythmic structure of the music is dependent on that context.

This has been one of the intentions of the thesis- to demonstrate how these two types of methodology- analysis of the music in its cultural context, and objective musicological analysis- need to be combined in this type of rhythmic analysis. On this basis analytical models and research methods were established in Section I; application of these methods to a case study on a small part of the Hindustānī tradition, generated a wide range of insights both on the specific research questions posed, and on the tradition as a whole. This demonstrates how rhythmic analysis may provide evidence to complement the oral tradition: in this case study the oral tradition proved to be largely supportable, although selective in that certain points are stressed over others, which are equally relevant from an outsider's point of view.

If there is a major criticism to be made of this approach, it is that a large amount of contextualisation is used to support the analysis. However, without such contextualisation, rhythmic analysis may be simpler, but will fail to tell us what we should be aiming to discover- how music is organised and how rhythm comes into being, what it means, and what it can tell us about the conceptualisation and performance processes of music as a whole.

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JIMS	Journal of the Indian Musicological Society
NCPA	National Centre for the Performing Arts (Bombay)

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8. Deepak Choudhury (sitār); Arup Chattopadhyay (tablā)  
Rāg Pūriyā *madhya lay gat in jhaptāl* London concert 7/9/91
9. Deepak Choudhury (sitār); Arup Chattopadhyay (tablā)  
Rāg Rāgeśrī *madhya lay gat in matta tāl* London concert 20/9/91
10. Deepak Choudhury (sitār); Arup Chattopadhyay (tablā)  
Rāg Tilak Kāmod *madhya lay gat in rūpak tāl* Birmingham concert 17/9/91
11. Deepak Choudhury (sitār); Arup Chattopadhyay (tablā)  
Rāg Tilak Kāmod *vilambit gat in tīntāl* London concert 27/11/90

